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NOTES ON GIANT-CELL TUMORS OF BONE AND CYSTS*

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IT is not my purpose here to do more than give the gross results of observation in this class of cases and some detail only in regard to individual cases that seem to me significant. The title is chosen because there present themselves to us a rather large proportion of cases that seem, offhand, to be giant-cell tumors. Careful study of history, physical findings and x-rays will give us a rough reclassification into typical and atypical cases, but, at least in the latter group, there are many errors. Therefore typical and atypical tumors and cysts (and the mistakes) will be considered together as a clinical grouping, not as if always related histologically at all.

The typical giant-cell tumor is familiar enough and perhaps some of us have swung too far in complacency as to the benign character of the growth. Sometimes we are reminded that the border-line of malignancy is a narrow one and that we really know but little about these growths. This type tumor is without significant history as to origin or course of the trouble until it is called to attention by a fracture through it. Typically these are infractions, cracks or crumplings only, not in themselves important. In gross there is expansion of the bone in diameter, with a blunting of outlines notable if it is near the joint end of a shaft bone. There is no characteristic heat or vessel dilatation or change of color. Soft parts are not infiltrated. There is no tenderness unless there has been a trauma.

By x-ray we find a wide area of transparency, that is, bone loss definitely limited in area but usually without any dense surrounding layer. The area of absorption looks as if it had progressed, not from the centre outward as with osteogenetic sarcoma, more or less globular or oval, but as if it had pushed its way into the corners of the cancellated bone. Typically the area of defect is more or less traversed by trabeculations. This is not a reliable differentiation, diagnostically, against cyst, either way. Growth causes absorption of the cortex, sometimes entire. Protrusion through the periosteum or into a joint is not part of the type picture.

Exact x-ray diagnosis is only at times possible, but the common confusion is as between cyst and tumor. We may say with some confidence that we have a sarcoma or myeloma, or that we are dealing with *either giant-cell tumor or cyst*. We are not always certain, or always right.

Much has been made of the location, more than the facts seem to warrant.

Typically giant-cell tumors belong to shaft ends (not epiphyses) of the tibia or femur at the knee, of the humerus high up, or the radius at the wrist, while cysts, at least of the "solitary cyst" type occur more away from the bone ends. In practice either may occur anywhere. We have cases of giant-cell tumor of radial and humerus midshaft.

In this small series are giant-cell tumors of the jaw, of the scaphoid of the foot, of a metatarsal, two of the phalanges of the hand, two metacarpal tumors, one case of a patella, one probable vertebral involvement*.

Tumors of the jaw, not in bone (epulis) are recognized, and in our series there are apparently typical tumors, without primary bone origin, in the pulp of a finger tip, at the end of a toe, in the capsule of an ankle joint. Apparently they may be anywhere save in the ribs and the skull.

On the other hand, cysts in our series occurred in or close to the head of the femur in four cases, close to the knee in one, close to the tibial head in three, at the ankle in one, close to the shoulder in two, once in a metacarpal, and once in the pelvis. On the other hand, eight were shaft cysts. So the line is far from sharp.

Histologically the giant-cell tumor is a granulation tissue, a fibroblast mass studded with "foreign body" giant-cells (Mallory), vascular, without considerable mitoses. It is sharply different from the malignant type with "tumor" giant-cells. Mallory has a type case of this sort, a giant-cell growth, but with every histologic sign of malignancy. Broadly speaking, it is true that the tumor characterized by giant-cells of the "foreign-body type" (as Mallory has long called them) scattered thickly in the mass of fibroblast granulation, is in the vast

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*Lewis, Dean: Primary giant cell tumors of the vertebrae. J. A. M. A. 83:1224 (Oct. 18) 1924.

majority of cases benign. Changes in tumor character are vastly rare; so rare that I think there is some doubt in the matter. There have been a few cases of death, with metastases.

One case can only be called malignant, but the impression gained in seeing it was of presumably embolic metastases in the lung, not generalizing, of unchanged histological character.

Another, Case II, F. F., died.

CASE I, M—n.

A girl of nineteen in 1925 after slight injury developed a tumor of the radius at the wrist which by March, 1926 became disabling. Operated March 27, 1926 at the Massachusetts General Hospital. Recurrence after two months. X-ray treatment, intensive, but with no results. Seen by me Dec. 7, 1926 with a much expanded bone. Skiagraph typical. Operated on by me, Feb. 14, 1927. Type tumor: No cystic degeneration. Curetted and packed. Healed quickly.

Pathological report by Mallory of a typical "chronic inflammation with foreign body giant-cells. Healing and partial bone repair."

Reoperated in July, 1927 for recurrence in region of the radial styloid.

The pathological report was again of the typical tumor. After this there was healing and at least no definite recurrence locally. Early in December, 1927 she developed a cough and on Jan. 3, 1928 there showed characteristic metastatic nodules in the lungs, increasing rapidly in size to May, 1928. Then a quiescence of growth and symptoms but after x-ray treatment she grew worse and died in October 1928, three years after the recognition of the tumor. I am afraid the x-rays here did only harm.

CASE II, F. F., Baddek, Nova Scotia, woman of 59, seen Jan. 13, 1930. In December, 1928 she had an epulis of upper jaw removed which was called a "sarcoma" and treated afterward with radium. Examination showed tumors of the ulna at the right wrist, left patella, and left lower jaw. Curettage and the usual vaseline pack. All tumors removed were diagnosed as type giant-cell growth by Mallory.

All wounds healed; there were no recurrences but a fresh tumor appeared in the right radius at the wrist, doubtful when she was first sent home, rapidly growing a month later and operated in February, 1930. Tumors developed in the knuckles. A third operative series was done in May, 1930. Within five months there was a spontaneous fracture of one tibia and a humerus broke as she fell.

Tumors developed in both hands, in the tarsus on one side, in a fibula, and in an ulnar shaft, in hips, etc. Some of the growths were operated on in Nova Scotia. She died Oct. 11, 1931. There had been an incredible number of growths, a number of fractures. Viosterol was used.

In October, 1930 I wrote Dr. McMillan my conviction that this case belonged in the class of v. Recklinghausen's osteitis fibrosa cystica.

In 1930 I knew nothing useful about the parathyroid relation to the condition.

The first report is cited above. The second operation brought a report from F. B. Mallory. The picture was consistent with so-called "benign giant cell tumor of bone."

Pathological report after the third operation from T. Leary reads, "Benign giant-cell tumors of first right metacarpal, right ring finger and left hand."

One case showed clinically a queer type of recurrence, late and fast, with a histological picture suggesting a station on the border-line of malignancy.

CASE III, M. Q., a woman of 46 seen November 19, 1931 right knee lame for a month. Tumor of the outer part of the head of the tibia seen by x-ray with slight infraction of the cortical layer but no trabeculations. It looked like a cyst. Operated on November 25, 1931, and it proved to be a tumor, which was cleaned out and packed in the usual way.

Pathological Report: "Two types of reaction. In one area the tissue is composed solely of newly growing fibroblasts growing without any characteristic arrangement." The other area a typical "giant-cell" tumor. No mitoses.

Diagnosis: Giant-cell tumor; granulation tissue. (J. Stewart Rooney.)

She healed quickly, became active and well save for a developing high blood pressure which was successfully reduced.

In August, 1933 a routine check x-ray showed a quick recurrence; this two years after the first operation, and without warning symptoms.

Operation August 15, 1933 showed the tumor to be seemingly a typical giant-cell but unusually vascular and like a myeloma. The tumor was larger than at the first operation. It was treated as usual and has done well, but the microscopic picture, giant-cell again, showed more mitotic figures than one likes. X-ray treatment promptly. Judgment reserved.

May 17, 1934, no further recurrence.

There are two cases recurring persistently that raise a suspicion of malignancy.

CASE IV, L. F., a colored man, aged 40, was admitted to the Hospital Sept. 5, 1928. Says he struck his wrist against a door three months ago. Swelling appeared which grew rapidly.

Examination shows the tumor at the lower end of the radius, typical except that it is tender.

X-ray showed a typical giant-cell for the lower two inches, extending close to the joint. There was a good deal of expansion.

Operated on September 11, 1928. Typical tumor except for some tumor tissue externally, apparently oozed out through a small fracture line. Usual routine.

Pathological report of type tumor. Cleaned up well but had a recurrence after about a year.

Entered another service with a pretty large tumor at the wrist in April, 1930 and for some reason amputation was advised, and done, but the pathological report read: Foreign body giant cells. Blood pigment. Chronic inflammation: new bone formation. Picture consistent with so-called giant cell tumor. (Mallory.)

CASE V. Case of Dr. Hepburn's at the Boston City Hospital.

Almost similar to the above, a giant cell tumor of the tibia, high, in a woman of 40 which recurred after seven years, but then reappeared within two months. The leg was amputated in January, 1933. No recurrence as yet up to August, 1933. A giant-cell tumor, no sign of malignancy histologically.

These cases seem in no sense to be malignant as the term is used. Recurrence may mean inefficient surgery.

CASE VI, H. F.

In 1920 at about six years of age, had an abscess of the cheek. Six months later there was painless swelling of the jaw. Seen a year later, showed enlargement of the lower jaw from above the angle forward to the bicuspids.

Operated by curetting and packing under the old technique. It took nine months to heal.

Two years later operated for recurrence. It healed in two months.

These were typical giant cell growths and so reported microscopically.

An operation for scar keloid in 1924.

Examined in May, 1933. No recurrence, no deformity, almost invisible scar.

In this case the operation was extensive and difficult and it obviously took two tries to get it all.

No other cases have recurred, though one other was mistakenly opened up for what proved only a cyst-like pocket.

CASE VII, U., a woman about 22. Tumor of the radius at the wrist. Operated as usual, healed but did not shrink down and x-ray was doubtful after three months. Operated on, no tumor found. Went on to perfect healing. No recurrence for two years at least. This was an unnecessary operation.

There are not uncommon seeming transition forms, on the way from tumor to cyst.

A notable example, already recorded, shows this very definitely.

CASE VIII, P. S.

Boy of five years. Operated at the old Beth Israel Hospital for osteomyelitis. It was not osteomyelitis and the pathological report from the Harvard Medical School was "giant-cell sarcoma, malignant," which also it was not.

Seen by me July 24, 1929, then eleven years old. History of slowly developing bowing and shortening of the right leg. Then two inches short with upper end of tibia much broadened.

X-ray showed apparent multiple cysts and deformity of the epiphyseal line.

Operation July 29, 1924.

Three separate cysts, occupying the whole head of the tibia close to the epiphysis. No sign of any lining. It was made into one cavity, cleaned, and filled with Horsley bone wax and closed.

Prompt recovery with no recurrence.

Oct. 6, 1924, it showed repair, with absorption of the wax beginning.

Kept track of to July 10, 1929 at which time the transparent area (bone wax) showed in the x-ray as about half the mass put in.

The epiphyseal line was more nearly flat and normal.

Damage to the epiphyseal line may be chargeable to tumor involvement, quite as likely resulting from the first operation, however.

This case brings up definitely George Barrie's contention of years ago that giant-cell tumors were an "Hemorrhagic osteomyelitis"* forming the pseudo-tumor, retrograding to the cyst.

It is certain at least that the tumor *may be* the forerunner of the cyst, and one sees occasional transition cases, mostly cyst with giant cells in the organized more fibrosed wall, or a fibrous lining to a cyst from which the giant-cells have disappeared.

CASE IX, M. C., girl of 13. Operated on December 3, 1932. No history till the bone broke with very slight trauma. Tumor was at the distal end of the second metatarsal which was much expanded and broken across.

*Barrie, George: Multiple hemorrhagic foci in bone. Ann. Surg. 71:581 (May) 1920.

Usual operation save that the wound was closed over blood clot and not packed. Traction to toe applied to maintain the shape of the bone. Ideal result up to Sept. 10, 1933.

Pathological Report:

"Sections show one portion of the cyst wall to be composed of fibrous tissue. Other portions of the tissue are composed of cells apparently derived from fibroblasts, these cells growing in an irregular manner and numerous giant-cells are seen. An occasional mitotic figure is also seen." Diagnosis: Giant-cell tumor of bone. (J. Stewart Rooney.) In gross this was a cyst with "tumor" lining or granulation lined cysts, with considerable soft tissue, which do not show characteristic giant cells in the mass.

CASE X, H.

Aged five and a half years. Operated at Beth Israel Hospital Jan. 13, 1931. Spontaneous fracture of the humerus. Diagnosis from x-ray of giant cell tumor.

Operation showed a cyst, with tissue lining. Treated as usual and treated promptly.

A residual cyst was opened up a year later, Jan. 7, 1932, and healed. No recurrences to date.

Microscopic examination showed no giant-cell tumor, only "chronic inflammation with new bone formation." (M. J. Schlesinger.)

Obviously the eighteen days' old repair of the fracture overlaid any "tumor" pathology there may have been.

CASE XI, T. R. of Waterville, Maine, boy of 16. Broke both bones of leg four weeks ago just below knee. Pathology underlying the break not noted. Seen Dec. 15, 1931. X-ray showed an oddly elongated atypical cyst. Diagnosis of cyst tentative. (Dr. Paul Butler.)

Operation Dec. 17, 1931 showed cyst with much tissue lining which was cleared, packed, healed and repaired. Last year the boy ran the mile for his school.

Pathological report showed repair changes chargeable to the fracture and, besides this, giant cells are seen and it is difficult to determine whether they are the giant cells characteristic of so-called giant cell tumor or whether they are the giant-cells seen in cases of repair. A very rare mitotic figure can be seen.

Diagnosis: Granulation tissue; giant-cell repair; bone cyst (giant cell tumor). (J. Stewart Rooney.)

Examined in April, 1934. No sign of recurrence.

Of possible meaning is the internal pressure found in some cysts with minimal fibroblast cyst lining. This tension is not easily understood.

It is odd that just one of these cases is the only cyst that recurred.

CASE XII, D. W. Male. Aged 40. Seen July 25, 1928.

Sudden onset of pain in hip ten days before, severe, increasing.

Temperature 100 degrees. Markedly sensitive hip. Some muscle spasm. Intensely painful. X-ray showed cyst in neck of femur. Unusual pain and temperature suggested a side diagnosis of Brodie's abscess.

Operation, Faulkner Hospital, July 28, 1928. On cutting down to the bone, fluid was extruded under pressure from tiny orifices in the thinned cortex. Cyst cleaned out and packed as usual with vaseline. Healed promptly and did not recur for the two years he was followed. X-ray Oct. 10, 1928 showed rapid bone repair. The pathological report reads "Cyst containing cholesterin crystals with a wall of connective tissue containing blood pigment." (F. B. Mallory.)

CASE XIII, C. H., girl of 13. Admitted May 22, 1928. Six weeks' history of swelling below the knee "size of hen's egg." X-ray diagnosis bone cyst of upper tibia. Other bones show no changes.

Operation: May 24, 1928.

Cavity opened and wiped out. Bone walls broken into the cavity and wound closed over blood clot.

Oct. 4, 1928 a second operation for recurrence beneath the repair scar; cleaned out and disinfected with carbolic and alcohol. Packed with vaseline. Six weeks later there was no x-ray evidence of bone repair. This never thoroughly healed, though it did not recur again as a cyst, and Sept. 11, 1933 she still had a small indolent sinus. Pathologically it was reported as a cyst simply. Unfortunately the only report found is illegible.

This brings up the matter of other retrograde processes. Broadly speaking, what becomes of giant-cell tumors? Some become cystic, as noted, and for all we know remain cystic without growth, indefinitely.

Others, we have assumed, when released from tension by fracture, retrograde and are cured. I know of no data for this assumption. Certainly opening of the surrounding wall, in default of cleaning out, does not necessarily cure the trouble. In cases operated on, and packed with vaseline, the inner surface quickly becomes clothed with granulations; the healing is by fibrous scar, much of which is presently calcified and reorganized into something approaching normal bone. The process is then over.

We do not know whether fibrosis as such is one of the end results of giant-cell growth. There are three cases in point.

CASE XIV, P., man of 27. Seen April 26, 1932. Operated on twice elsewhere for giant cell tumor of the lower end of the femur. The second time, bone grafts were put in. Sepsis followed involving the knee and continued two years. He showed no repair and on x-ray, apart from results of sepsis, dead grafts and non-union there was a definite ovoid mass, three inches in length, apparently tumor, central in what was left of the shaft near the knee. After a preliminary open drainage operation and some regaining of health a thigh amputation was done, which healed in due normal course.

To my great surprise there was no tumor as such. The great ovoid mass of dense tissue within the bone was "fibrous tissue showing marked round cell infiltration. There is no attempt on the part of this fibrous tissue to become calcified and no evidence of new bone formation can be made out. An occasional giant-cell is seen. These giant-cells have the appearance of foreign body giant-cells." (J. Stewart Rooney.)

CASE XV, A. E., boy aged 12. Seen October 25, 1932. Fracture of left femur from two to four years previously (dates in history throughout are contradictory). Started to limp in the winter of 1931. Presented himself with picture of long mass of expansile growth in upper femur and a fresh infraction of bone wall. Shows Froelich's syndrome with marked adiposity.

Operation advised but not accepted. He disappeared, reappeared five months later and was operated on as giant cell or cyst. A fibrous tumor was found and enucleated. He was put under traction as only a periosteal shell remained. Under endocrine and vitamin regimen he showed excellent repair and no sign of recurrence.

June 23, 1933, a month after what seemed a normal repair, by x-ray there was evident a rapidly growing recurrence just below the site of the old mass.

This was operated, enucleated and packed. He did well clinically and repair was progressing well, when he was taken to New York O. R. A. A. and it appears that he died there a few weeks ago at the Memorial Hospital apparently from the shock of an operation, the indications for which are not clear to us.

The point of interest is that the first pathological examination by Dr. Rooney showed a benign fibroma, as to which the question of metaplasia from a giant-cell tumor was considered. The second specimen showed growth and mitotic activity which not only Dr. Rooney but Dr. Leary and three other pathologists who reported, could interpret only as a malignant mass.

We are not likely ever to have a conclusive answer in this case, only the sketch of which is here given.

CASE XVI, R. D., man of 27. Seen April 20, 1927. Injury to leg July 11, 1926, in plaster for nine weeks followed by "refracture" and again in plaster for three more weeks and crutches to February. Limp, pain and sensitiveness of right hip.

X-ray showed a seemingly large cystic growth in the trochanteric portion of the femur. Considerable expansion of bone with cortex thin and broken in two places, one of which looks old. (S. A. Robins.)

Operation April 27, 1927. Proved to be not a cyst but fibroma. Enucleated; vaseline packed as usual. Healed promptly, treated in ambulatory splint for months to avoid deformity. Bone repair complete by x-ray Jan. 7, 1930. Jan. 8, 1931 x-ray shows solid bone. May, 1933, clinical examination shows a perfectly normal hip with full function.

The pathological report was of "a fibroma of connective tissue consistency showing microscopically numerous spicules of bone about which there is a conspicuous proliferation of connective tissue". (L. W. Smith.)

One case, pure myxoma histologically, so strongly suggests in history and pattern the giant-cell group that one is inclined to list it here.

CASE XVII, MRS. M. S., Taunton, a woman of 26. Seen May 12, 1933 with no history other than a twist of the right wrist (not severe) ten weeks ago. Lameness persisted and thickening was noted. X-ray taken showed tumor cyst of lower end of radius. Much disappearance of bone with the cortical layer thin and expanded; the tumor extends pretty well into the radial styloid. Called probable giant-cell, but atypical in that absorption is very uniform and trabeculations are absent. The film shows a half-healed infraction of the cortex.

Operation May 14, 1933, Faulkner Hospital.

Tourniquet applied. Incision over outer side of radius and the dorsal branch of the radial nerve pushed aside. No infiltration of tissue with tumor at the point where the infraction is evident. Tumor laid open and the cavity was filled with a semi-fluid paraffin-like material. Cavity involving the whole diameter of the bone, two inches long, measuring up from the radial walls of the cavity with hard clean bone not infiltrated and with no tissue lining.

Cleaned out mechanically, swabbed with alcohol, packed with vaseline and boric strips. Pressure dressing.

Biopsy showed (frozen section) myomatous tissue without cell activity.

Pathological Report: "Sections microscopically through the tissue submitted for examination shows it to be composed of a very loose textured supporting stroma of fibrous tissue surrounding a purple staining homogenous material. The cells are fairly regular in outline and a very rare mitotic figure can be seen. The tissue is characteristic of a myxoma. This type of new growth must be treated as a potential malignancy. The spicules of bone submitted for examination present nothing unusual in their appearance."

Diagnosis: Myxoma (Premalignant). (J. Stewart Rooney.)

May, 1934. This case is still sub judice, vibrating between Bloodgood and Boston.

One case called probable giant-cell proved a myeloma.

Case XVIII, H. M., a man of 45. Seen April 24, 1928, with spontaneous fracture of the right humerus, high, three days previously. X-ray showed a cystic picture on which no positive diagnosis was made. Operation May 18, 1928 showed a terrifically vascular tumor which was enucleated and packed. It was reported as a myeloma (Mallory). X-ray treatment was instituted.

Healing and repair went well and he returned to work continuing x-ray treatment with Dr. Charles Whelan.

May 8, 1929 he was operated on at the Faulkner Hospital by me for a recurrence about the greater tuberosity.

Again the vascular tumor—but in spite of hemorrhage a more satisfactory enucleation and clean-up was done. Again x-ray and rapid repair. There has been no return of the growth. Function is perfect. Examination Sept. 27, 1933 showed no recurrence by x-ray. Skull negative.

The second pathological report was as follows:

"Sections microscopically through the small pieces of tissue reveal the presence of numerous round and spindle-shaped cells which have somewhat the appearance of those found in sarcomas. A few giant-cells are also seen in the tissue. The new growth is characteristic of a myeloma."

Diagnosis: Myeloma. (L. W. Smith.)

April, 1934. No recurrence as yet.

Another case, seen in consultation with Dr. Leo Brett, was apparently a giant-cell tumor of a vertebral body, proved on operation to be myeloma, recurred, late, with cord symptoms, was again operated, and radiated, with apparent entire cure. Now reported free from trouble, years after the first onset.

These two cases, incidentally, are not unimportant as showing what can be done with myelomas.

In this connection may be cited a case of mine, years ago, that was operated on for a myeloma of the femur (with spontaneous fracture) and later for a large myeloma of a rib, and showed skull foci. He died five years from the onset of pneumonia from exposure in a blizzard.

Of interest also is the fact that very definite skull foci in that case, and small patches in the skull in case XVIII, H. M., remained stationary for a very long time. Probably one does not cure these cases but they certainly reward proper treatment and justify a certain optimism.

Some confusion may obtain between Brodie's abscess and cyst. The history may not help and the containing wall of bone, the main diagnostic point, may show up in a cyst, and may be indeterminate in an abscess.

Now we come to cysts as cysts.

Those which most interest us are those probably without parathyroid antecedents, and that means essentially the solitary cysts single or complex, occurring typically in the shaft of long bones, with a picture (*including* bone expansion) practically exactly like the giant-cell masses, or else they are close to the joints in just the place for a giant-cell tumor, looking a good deal like it in the x-ray, though usually lacking the trabeculations and apt to show less penetration into corners of the bone.

Of our lists those that may with much reason be regarded as belonging to the giant-cell class, or at least related, number seventeen. These were all cases operated on and verified. So far as the data go, none recurred, none failed to repair save the unlucky case XII, and here infection may have been a factor.

But there are cases of cyst that one may not classify at all, as yet.

Case XIX, C.
Case XXI, K.
Case XXII, Marble's case.

Other cases must be classed as osteitis fibrosa cystica. No cases of Köhler's disease, or Kienboch's and the like are here included, though we must call them fibrous osteitis.

Of the cases that follow none were generalized, but five of the six showed other bones involved and the sixth an extension in the same bone.

Case XXIII, O.
Case XXIV, R.
Case XXV, H.
Case XXVI, M.
Case XXVII, L.
Case XXVIII, G.

Of these only the last has had proper lime and phosphorus study. She was referred to Albright's clinic, carefully studied and reported entirely negative. Two others had lime determinations, within normal limits, but this was a few years ago, with the technique of that time. Case XXVI is the only unoperated, unverified case.

There are a few cases not cystic at all—but obviously related.

Case XXIX, P.
Case XXX, F.
Case XXXI, W.

There is one Case XXXII, S., the only one except Case II that can be called general skeletal involvement.

It is self-evident that many of these cases have not been studied adequately in regard to lime and phosphorus output. They antedated really modern chemistry in many cases, and are

only now being rounded up for calcium phosphorus checking, as they can be found.

It is, however, pretty obvious that we have in this rough class of cases, besides the active giant-cell tumors, many cases probably related to giant cell antecedents, not generalized, that seem to range logically with the osteitis fibrosa group, about the chemistry of which we do not know.

There can be no question about the value of the demonstration of lime chemistry in the type of generalized bone involvement first described by von Recklinghausen as osteitis fibrosa cystica.

And it should be a matter of local pride that our researchers and surgeons have more than done their share in demonstrating that parathyroid tumors are the ultimate cause of the hyperparathyroidism of which the osteitis is one expression.

Once and for all, I think we can accept parathyroid pathology as the cause of v. Recklinghausen's disease and high phosphatase as the index of Paget's.

But that does not quite answer the whole question of osteitis fibrosa even with cysts.

v. Recklinghausen's material, as I recall it, was the amazing collection of the Rokitansky museum.

The extreme type of bone degeneration and cystic change that he describes is not common with us. What we have listed as osteitis fibrosa cystica and the non-cystic forms are much more usual. How many of these cases are we going to find due to excessive parathyroid activity? Some of course, but certainly not all. Probably a reclassification is due—on these grounds. Meanwhile the clinician has his problems.

Given a case which seems to be giant cell tumor or cyst—or given what seems an unclassifiable cyst, what is to be our routine? *Not waiting*, which first, leaves us in ignorance. Secondly, if we are wrong, it deprives the patient of a chance of cure of a malignant disease. Thirdly, if it is a giant-cell, waiting merely invites further involvement. Fourthly, if it is a cyst, it begs the question, for there is nothing to show that cysts disappear.

Not x-ray (without operation) because first, that means x-ray treatment without diagnosis. Secondly, if the growth is already cystic it accomplishes just nothing at all. Thirdly, if it is a giant-cell tumor, x-ray may encourage its spread. There is just as good a chance of this as of the reverse*. If this occurs the end result is going to be worse than with prompt operation. Moreover, the chance of recurrence is admittedly pretty much the same and the recorded cures have often taken a long time.

I have just re-read Pfahler's paper of 1932† and am not impressed with the results recorded, at all.

First, of course the diagnosis is often open. He states that "A biopsy is necessary only when the diagnosis remains doubtful after a thorough roentgen examination by an experienced roentgenologist." To-day, this sounds extraordinarily like nonsense. Of six cases of which skiagraphs are given, one is obviously osteitis fibrosa cystica of the parathyroid type, one pretty clearly a cyst *not* cured after nearly six years, and one might be a variety of things. Of the other three, one showed prompt results, one very imperfect repair after over five years and lamentable interference with growth of the bone, and the table of 26 cases is not encouraging.

Reasons against open operation are fear of a biopsy, surely not logical in face of a diagnosis of giant-cell all made, and fear of infection, which does not seem to happen with adequate technique. On the other hand, operation does as a rule bring about real repair of the tumor as well as of the easier cyst cases, pretty promptly and pretty regularly*.

Much has been said about errors in diagnosis, with much criticism of pathologists' opinions. Leaving aside the vexed matter of classification of sarcomata, myelomata, Ewing's tumors, etc., and considering for the moment only the class provisionally diagnosed as either giant-cell tumors or cysts, and the errors seem very few, confined in fact in our series to two x-ray mistakes, and no mistakes by the pathologist.

What we wish to know is whether the tumor is malignant or not. Mostly we can get that answer, and in such shape and at such time as to be of real advantage to the patient. I am perfectly ready, this answer given, and acted on, to leave the minute classification to the research laboratory. If we can, at a serviceable time, get more from the histology, well and good, but it will decide little save as to the occasional wisdom of relying on radiation for treatment.

It is time we had something like a routine. Given a tumor apparently not sarcomatous, apparently of the giant-cell or cyst class, operation is called for, promptly as a rule, and our fallibility in diagnosis demands these precautions. 1. Definite permission to deal properly with what we meet, at least to the extent of resecting a part of the bone. 2. Biopsy with a tourniquet. 3. Examination by frozen section technique (tourniquet still on). From that point on the problem is the surgeon's.

So far as giant-cell tumors are concerned they may be laid open widely and cleaned out thor-

*It seems to be a matter of dosage. Herendeen using the massive dose technique got primary decalcification.
(Herendeen, R. E.: Results in röntgen-ray therapy of giant-cell tumors of bone. Ann. Surg. 93:398 [Jan.] 1931.)
Pfahler using fractional dosage has not noted this.

†Pfahler, George E., and Parry, L. D.: Treatment of giant-cell bone tumors by roentgen irradiation. Am. J. Roentgenol. 28:151 (Aug.) 1932.

*Recurrences occur, *either way*, in no small proportion of the active giant-cell cases, but can be reoperated with fair certainty of eventual cure.

oughly from within anywhere except the spine*. Cysts can be laid open, wide, and any lining membrane, whether of giant-cell tissue or simply fibrous, cleared from the inner wall. With the proper technique in clearing out, I am not sure of the need of corrosives to the inner surface, and they are certainly not to be used unless one is sure.

There seems to be no advantage,—and various disadvantages, to filling with bone chips or what not. Filling the cavity, after bleeding has ceased, with greased gauze strips if need be, *not* packed in tight, gives every chance of quick repair. Dressings are seldom changed, of the same type till granulations cover the inner wall at least. Mechanical support, sometimes with traction, gives protection against fracture or collapse of the walls. Some recurrences seem unavoidable by any technique, not excepting the cases treated by radiation. There has been in my hands no death from operation, no case of osteomyelitis, only one persistent sinus. (Case H.)

There seems to be, except in spinal cases, no real reason for x-ray treatment.

One expects sound healing from within, reasonably prompt, eventually perfectly serviceable*.

For all tumors of this class may I bespeak effective teamwork of x-ray man, pathologist, and surgeon. With such a team, acting together promptly, the actual clinical problem presented by this class of growths may be made almost simple†.

DISCUSSION

Dr. Ralph B. Ober, Springfield, Mass.: Several years ago Dr. Glickman, of Springfield, referred to me a Jewish woman of forty who had had a slight injury to her wrist. X-ray showed a tumor the size of a small hen's egg involving the lower end of the left radius. Under ether it was found to be a soft tissue tumor rather well encapsulated.

The cavity was thoroughly cleaned out, cauterized with carbolic acid, and packed with iodoform gauze. It healed promptly. Recurrence occurred in a few weeks in spite of radiation.

The case was referred to Dr. Wheat, the orthopedic specialist at the Springfield Hospital. Under ether he removed the lower end of the radius completely and grafted in its place the head of the fibula. No recurrence followed. The graft took nicely and to-day, four years later, even by x-ray it is hard to believe that the original radius is not in place.

Both tissue examinations showed giant cell tumor.

Dr. Cotton's paper offers some very interesting ideas. If nature has various ways of reacting to stimuli on the way to recovery, conservatism should be the keynote of treatment.

Should the diagnosis prove to be wrong and the condition of a more malignant nature, what has operative procedure in the past proved of any more value than conservatism?

Dr. E. A. Jones, Manchester, N. H.: I should like to ask Dr. Cotton's opinion of this case. A man fifty-five years old had progressive swelling in the left groin for about five months. X-rays taken at this time showed a broadening of the ascending ramus of the ischium with a marked thinning of the cortex. He was given four x-ray treatments and the swelling and tenderness began to diminish, and he went on to what was called practically a complete recovery. This was four years ago and he has had no trouble since that time. The diagnosis was giant-cell tumor. This is the first one that I have ever heard of in that region until Dr. Cotton mentioned his case. I should like to ask Dr. Cotton if he would agree with the diagnosis in this case.

Dr. Robert B. Osgood, Boston, Mass.: I report an almost identical case to Dr. Jones' which with x-ray therapy seems to show a definitely healing process which has progressed for several years.

Dr. Cotton: In reply to Dr. Jones, I am skeptical about these giant-cell cases that heal right up. The tumors which are really radiosensitive, if you get anywhere in these cases, are likely to prove to be myelomas, but once in a while they are Ewing's tumors, so-called. They are much more radiosensitive than any of the others.

The giant cell shows under x-ray one of two things, it either starts to grow at an increased rate with heavy dosages until the cortex has entirely disappeared, and then the favorable cases retrograde; those cases of retrogression show after they have retrograded, about the same proportion of recurrences that you get after the operation on those cases. On the other hand, if you use fractional doses of x-ray, following Pfahler of Philadelphia, I can't see that you accomplish much of anything. His published plates seem to me a beautiful atlas of giant cell sarcomata which probably cure themselves anyway, and I think that case of yours is going to be found to be in the unfortunate class where nobody knows what it was. It might perfectly well have been a giant-cell, but that is not the typical way in which a giant-cell works.

*In cases close to joints there may be some deformity of joint surfaces—unavoidably. There may, for one or another reason, be less than normal range of motion, as a result.

†For the moment I think the local clean-up in single lesions should have precedence over investigation of endocrine function—in time.

CANCER OF THE MOUTH IN WOMEN*

BY GRANTLEY WALDER TAYLOR, M.D.†

THE present study was undertaken with the purpose of seeking verification of certain impressions developed in the course of observation and care of women with carcinoma of the buccal mucosa at the Pondville Hospital.

Briefly stated, these impressions were that there was a low incidence of cancer of the mouth in women, that there was a different regional incidence of disease in women as contrasted with men, that artificial dentures played a prominent part in the etiology; that in women the disease was relatively less malignant, progressed more slowly, formed metastases later and in fewer cases, and was relatively more curable than in men.

Some measure of verification resulted from the study of results in cases of cancer of the buccal mucosa admitted to Pondville during the first two years. The series consisted of 115 cases of which 10, or 9 per cent, were women. Of the total group nine were living and well three years or more after operation, of whom three or 33 per cent were women. It was noted that seven of the ten women were edentulous, and wore dental plates. In a recent series of 83 cases studied at the Massachusetts General Hospital, eight patients were women, in five of whom there was a definite history of trauma from carious teeth or ill-fitting dentures. These findings were suggestive, although the number of cases was so small that dependable conclusions could not be drawn from the data.

A larger experience is that of the Huntington Memorial Hospital. Lund[1] has recently published several studies on the series of cases of buccal carcinoma seen at the Hospital from 1918-1926 inclusive. This series I have further analyzed by means of the punch card summaries which he prepared for his studies.

Distribution. The series consisted of 1128 cases of carcinoma of the buccal mucosa, of which 114 (10 per cent) occurred in women. When the cases are subdivided by regions, it is apparent that women have a relatively high incidence of carcinoma of the upper jaw, and a relatively low incidence of carcinoma of the floor of the mouth.

The causes of this difference in distribution must be sought in study of the etiological factors involved.

Syphilis. Lund's[2] study of the relation of syphilis to cancer of the buccal mucosa confirmed previous observations that syphilis is of etiological significance only in cancer of the tongue. The contrast between the sexes in regard to the activity of this factor is very striking. Considering only those cases in which the Wassermann test was done, 25 per cent of the males with cancer of the tongue presented positive Wassermann reactions, as compared with six per cent of the females. Obviously there may have been some clinical selection of cases on whom the test was performed. But the difference between the series remains striking even when the incidence of known positive Wassermann reactions is considered in relation to the total group of tongue carcinomas, namely 15 per cent in men as compared with 2.6 per cent in women. It may be reasonably concluded that syphilis plays a very minor rôle in cancer of the tongue in women, in contrast to its marked etiological significance in men.

TABLE I

DISTRIBUTION

Region	Total Cases	Per Cent of Women
Tongue	409	9.3
Floor	125	4.8
Cheek	151	12.0
Palate	75	14.6
Tonsil	146	9.6
Upper jaw	67	24.0
Lower jaw	155	7.1
Total	1128	10.0

Tobacco. The extremely significant etiological rôle of tobacco in buccal cancer is emphasized by this study. Data as to the use of tobacco are available in over 85 per cent of the male cases. Unfortunately less than ten per cent of the female patients were specifically questioned on this point, and they all denied the use of tobacco. While definite data are lacking for the other female cases, it is our opinion that the female group did not use tobacco to any great extent. Among the men, only 4.3 per cent were non-users of tobacco. It is probable that the relative immunity of females to cancer of the mouth is in large degree attributable to their relative freedom from the use of tobacco. The use of chewing tobacco was recorded in half the cases of cancer of the cheek (53 per cent) and lower jaw (46 per cent). Among the men the highest percentage of non-users (14 per cent) and an average percentage of use of chewing tobacco (37 per cent) occurred in cancer of the upper jaw. It is reasonable to conclude that cancer of this region is caused primarily by some other factor than the use of tobacco. For the whole group, the use of chewing tobacco was recorded in 37.3 per cent. Use of cigarettes and

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Read at the meeting of the Boston Surgical Society, December 4, 1933.

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snuff was recorded infrequently; and it is perhaps reasonable to conclude that they are less noxious than other forms of tobacco.

Dental Status. Data in regard to the teeth are unfortunately missing in nearly half the cases, and incomplete in many of the others. Certain conclusions appear reasonable from the data that are available (table III). It may be assumed that edentulous patients had periods of more or less protracted caries and pyorrhea before submitting to complete extractions. It is noteworthy that more women than men have complete extractions, while men keep their bad teeth longer. Women also wear artificial dentures in nearly all cases, while only about half of the men who are edentulous are provided with plates. The common use of dentures undoubtedly plays a prominent part in the relatively high incidence in women of cancer of the palate, upper jaw, and cheek. It is noteworthy that the male patients with carcinoma of the cheek were in a high proportion of cases edentulous, and that the use of dental plates in this group was as high as among women. In thus emphasizing the rôle of dentures, it should be understood that if they are properly used, they are probably much less dangerous than the bad teeth that they supplant. Proper use implies above all that the fit be accurate; and this in turn often requires frequent readjustments as shrinkage of the supporting structures takes place. The material should be non-irritating and of smooth surface and damaged plates should be repaired promptly. Finally, scrupulous cleanliness must be practiced at all times. In those cases in which we find cancer in asso-

TABLE II

USE OF TOBACCO

Carcinoma of Buccal Mucosa in Males

Region:	Tongue	Floor	Cheek	Palate	Tonsil	Upper Jaw	Lower Jaw	Total
Cases:	371	119	133	64	132	51	144	1014
Use not recorded %	15.6	7.5	15	18	14.4	16	20	15
Non-users %	4.7	0	6.2	2	3.5	14	3.5	4.3
Chewing %	34	32	53	37	27.4	37	46	37.3

Cigarettes total 1.5% Snuff 2.3% Smoking 72.4%

TABLE III

CARCINOMA OF BUCCAL MUCOSA

Dental Status

Region	Data Recorded %	Teeth Good %	Teeth Bad %	Teeth None %	Edentulous With Dentures %	Without Dentures %
Tongue						
Males	46	7	66	27	45	55
Females		10	31	58	—	—
Floor						
Males	52	6	51	42	55	45
Females		—	—	—	—	—
Cheek						
Males	56	5.3	53	41	78	22
Females		23	—	77	—	—
Palate						
Males	40	4	80	16	0	100
Females		—	—	100	—	—
Tonsil						
Males	38	4	74	22	67	33
Females		—	—	—	—	—
Upper Jaw						
Males	70	6	60	34	46	54
Females		—	27	73	—	—
Lower Jaw						
Males	62	3.3	55	41	52	48
Females		—	57	43	—	—
Total						
Males	50	5.6	63	32	53	47
Females		9	24	67	87	13

Blanks left in the table indicate that numbers were too small to justify percentage computation.

ciation with the use of dentures, the plates are loose, or bring abnormal pressure to bear at certain points, or present fissures or breaks. Usually too there has been no attempt to keep the plates clean. It seems indubitable that trauma from jagged and carious teeth plays a prominent rôle in cancer of the tongue. This factor had probably been present, as I suggested above, even in those patients who were edentulous at the time of first examination in the clinic.

Degree of Malignancy. When histological study is made of the grade of malignancy, it is found that a definitely larger proportion of the tumors in female cases are of low grade of malignancy.

TABLE IV

DEGREE OF MALIGNANCY

	Grade I %	Grade II %	Grade III %
Males	32	38	29
Females	44	27	29

Lund[2] pointed out in his study that syphilis increases the virulence of the type of growth. It is probable that the relative infrequency of syphilis as an etiological factor in the female cases may account largely for the observed difference between the sexes as regards the degrees of malignancy. When only cases with negative Wassermann reactions are considered, the more favorable distribution in female cases disappears.

TABLE V

DEGREE OF MALIGNANCY

	Cases with Negative Wassermann Reaction		
	Grade I %	Grade II %	Grade III %
Males	33	38	28
Females	37	29	33

If an attempt is made to analyze the degree of malignancy in relation to the region involved, the numbers of female cases become so small that reliable conclusions cannot be drawn. It is interesting, however, that half the cancers of the tongue in women were of Grade I malignancy, while only about a quarter of the male cases were in this favorable group, even considering only those with the negative Wassermann reaction.

Rapidity of Metastasis. Of all the men reporting within three months of the onset of disease, 43 per cent already showed gross involvement of the cervical lymph nodes. The female cases showed only 24 per cent involvement in the same group. When the group is increased to include all cases reporting within one year of onset, the males showed metastatic involvement in 43 per cent, and the females in 33 per cent. These figures suggest that metastasis is established early in male cases; that the percentage of male cases showing metastasis does not increase greatly with increase in time, and that buccal carcinoma metastasizes later and less often in women than in men.

TABLE VI

PRESENCE OF METASTASES

	Metastases Already Present at Examination	
	Within 3 Months	Within One Year
Males	42.7%	43.3%
Females	23.6%	32.8%

TABLE VII

5 YEAR CURES IN PRIMARY CASES WITH NO OR SMALL NODES

	Males	Females
Failures	161	18
Cures	31	7
Inconclusive	9	2
Cures %	16	28

Cures. Lund[1, 2] showed in his study that cases which presented lymph nodes larger than about one centimeter in diameter were essentially incurable. The remaining, "potentially curable" group included 24 per cent of the female cases, and slightly less than 20 per cent of the males. Cures in this group are shown in table VII. It will be seen that for the group the cures in women are 28 per cent, while the cures in men are only 16 per cent. Although the series is small, the difference is so marked as to be suggestive.

SUMMARY AND CONCLUSIONS

Cancer of the buccal mucosa is rare in women as compared with men. Cancer of the upper jaw is relatively more common in women than in men, and cancer of the floor of the mouth is relatively less common.

Syphilis is a less conspicuous etiological factor in women than in men, in relation to carcinoma of the tongue.

The almost universal use of tobacco among men may account in large measure for the greater incidence of cancer of the mouth in men than in women. Among the men, chewing tobacco is especially prevalent in cases of cancer of the cheek and lower jaw. Tobacco seems to be of least etiological significance in cancer of the upper jaw.

Bad teeth are a very conspicuous etiological factor for the whole group. Men cling to bad teeth longer than women, while the latter have earlier extractions and much more often provide

themselves with dental plates. Improper use of dental plates undoubtedly plays a prominent part in the etiology of cancer of the mouth in women and perhaps of cancer of the cheek in men.

Men in general have tumors pathologically of higher grade of malignancy than women. This is largely due to the influence of syphilis in increasing the grade of malignancy.

Cancer of the buccal mucosa appears to metastasize earlier in men than in women, and more frequently.

The prognosis for five-year cure of cancer of the buccal mucosa appears to be better in women than in men.

REFERENCES

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DIAPHRAGMATIC HERNIA*

Medical and Surgical Treatment

BY S. ALLEN WILKINSON, M.D.†

THIS report concerns itself chiefly with the medical handling of the smaller varieties of diaphragmatic hernia and a discussion of the symptomatology arising from its presence. Before the advent of roentgenography, hernia of the abdominal organs through the diaphragm was recognized chiefly at the autopsy table and was thought to be a comparatively rare condition occurring only after severe crushing injuries or from congenital defects in the diaphragm. With the increasing frequency of x-ray examinations, it is now generally accepted that diaphragmatic hernia is by no means an infrequent finding. In 1912 Griffin[1] collected 650 cases from the literature and his own practice, of which the diagnosis had been made clinically in only fifteen. Morrison[2] reported forty-two cases in 3,500 gastric cases studied, a ratio of one to eighty-five. Carman and Fineman[3] in 1924 reported a ratio of one case in 18,000 for patients of all types, but this figure is unquestionably much too low. In the series reported in this paper, the ratio is one to 477, including all cases coming to the Lahey Clinic during the period covered by this study.

With improvement in roentgenologic technic, it was to be expected that the proportion of cases discovered would increase, and for a similar reason it is to be expected that diaphragmatic hernias would be discovered in a much earlier stage than those which caused symptoms demanding operation or which resulted in the death of the individual. The cases summarized here illustrate this fact, for it will be seen that only a small number required surgical intervention or caused the death of the patient, while most of them were readily amenable to treatment and a few caused no symptoms of any kind.

The cases summarized here were treated in the last seven years at the Lahey Clinic and represent all grades of hernia through the diaphragm from a tiny protrusion of the stomach to openings large enough to allow whole organs to pass into the thorax, but most are illustrative of the ordinary herniation found in the course of the routine gastro-intestinal examination.

An outstanding feature in the group was the difficulty in making even a provisional diagnosis of the condition in the vast majority of cases from clinical observations alone. There is no syndrome or symptom complex that is definitely diagnostic, although it will be shown that a number of symptoms are very constant findings. The one condition which is most commonly diagnosed provisionally is peptic ulcer, and in this series of seventy cases, there were forty where this was the tentative diagnosis. Yet, in only ten cases was ulcer found.

TABLE I

DIAPHRAGMATIC HERNIA

Symptoms	Frequency of Occurrence
	Cases
1. Postprandial pain or distress	47
2. Night pain	40
3. Relief by alkalis	37
4. Vomiting	33
5. Substernal pain or lump	15
6. Upper abdominal pain not periodic	14
7. Gas and belching	12
8. Heart burn	10
9. Dysphagia	4
10. Hiccough	2

The variability of symptoms is illustrated in table I. Naturally most of the cases had more than one symptom, but in some the symptoms were very mild or were masked by complaints referable to associated conditions. In only four cases of this series were there no symptoms which might be connected in any way with the presence of the hernia through the diaphragm. It is noteworthy that the four most prominent symptoms listed in order of frequency are all outstanding symptoms of peptic ulcer. The remaining symptoms listed are found in many conditions, both functional and organic, involving the whole digestive tract.

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Since there is no characteristic clinical symptom complex, the diagnosis can only be suspected at best, and in those instances where the hernia is composed of a fraction of the cardiac end of the stomach, it will usually be missed, even as a tentative diagnosis. Harrington states that "the symptoms of diaphragmatic hernia are probably more commonly confused with those of cholecystic disease than with any other lesion of the upper part of the abdomen." In Morrison's[2] series the clinical diagnosis was ulcer or gall stones in practically all cases. Bevan[4] made the same observation in 1920, and Richardson[5] in 1929 calls attention to the same fact.

While it is true that the larger, more severe grades of herniation of the stomach or other organs through the diaphragm can and do simulate gall bladder disease, it seems that this phase has been unduly stressed, while the simulation of gastric or duodenal ulcer by the much more common, small hernia of the stomach through the esophageal hiatus has not received the attention it deserves. In this series, the contents of the hernia consisted of the stomach only in sixty-seven cases, and in forty (60%) of these the tentative diagnosis was peptic ulcer. If the symptoms so strongly suggest peptic ulcer in 60% of cases, it follows that somewhat similar conditions must be operative, and that, whenever a diaphragmatic hernia of the stomach is present, the development of symptoms simulating ulcer would be more apt to occur than any other symptom complex.

TABLE II

DIAPHRAGMATIC HERNIA

Associated Diseases

Disease	Cases
Irritable colon	39
Diverticulosis	16
Ulcer, peptic or esophageal	10
Cholelithiasis	8
Hernia elsewhere	6
Cirrhosis of liver	2
Carcinoma of colon	1
Acute appendicitis	1

Diaphragmatic hernia, particularly the lesser gradations of it, may be the only organic lesion found, but there is usually some associated functional condition which often overshadows the picture. The most frequent of these is irritable or unstable colon in 55 per cent of cases (table II). Chiefly because they are common in the same age group, diverticulosis occurs in 23 per cent and gall stones in 14 per cent of the cases respectively. The findings in this group of cases have impressed us strongly with the necessity for a complete gastro-intestinal study in all cases presenting symptoms referable to the alimentary tract.

The observation has been made that many cases of herniation of the stomach through the diaphragm develop an ulcer in the hernia. Mathews and MacFee[6] have reported a series of such cases. Harrington states that hemorrhage from gastric erosion at the site of the esophageal hiatus produces ulcer. There were ten cases of ulcer in this series (table III) of which only three had any direct relationship to the hernia. One of these was visualized by esophagoscopy and later caused the death of the patient by hemorrhage. There were six duodenal ulcers and one gastric ulcer, all of which should be regarded as coincidental findings rather than as results of the hernia.

TABLE III

DIAPHRAGMATIC HERNIA

Relation to Ulcer

Males		16
Females		54
Cases suggesting peptic ulcer		40
Duodenal ulcer	Males 5, Females 1	6
Gastric ulcer—Females		1
Esophageal or hernial ulcer	Male 1, Females 2	3

TABLE IV

DIAPHRAGMATIC HERNIA

Size of Hernia

% of Stomach Above Diaphragm	No. of Cases
10%	20
15%	21
20%	12
25%	9
33%	3
50%	2
100%	1

Since these observations concern chiefly small hernias, it is of some interest that 79 per cent of our gastric hernias were estimated roentgenologically to contain 20 per cent or less of the stomach (table IV). This fact also explains why the symptoms arising from these hernias are relatively mild and why they differ from the symptoms ascribed to hernia in many of the earlier writings. In most of the articles the cases reported were extensive, and the pathological conditions found were much more involved than in most of our own. Harrington[7], LeWald[8], Morrison[2], Richardson[5], and others have called attention to the short esophagus in most of these cases. The majority of the cases reported here are of this type. The esophagus enters the top of the hernia and appears definitely shortened. It seems probable that most of these are of congenital origin, but it is unlikely that the defect has always been present. If this were true more hernias should be dis-

covered in younger individuals, whereas the average age is fifty-four years (table V).

The very fact that the diagnosis is almost always made solely by use of the roentgen ray carries with it the corollary that the roentgen ray should be used whenever the diagnosis of diaphragmatic hernia might be a possibility. Because the majority of these hernias cause no

TABLE V

DIAPHRAGMATIC HERNIA

	No. of Cases	Maximum	Minimum	Average
Age	70	75	16	54.2 yrs.
Weight	64	225	94	157 lbs.
R. B. C.	54	6,270,000	2,970,000	4,640,000
Gastric acidity (Ewald meal)	52	81 Free 88 Total	0 Free 7 Total	33 Free 54 Total
Duration	62	Lifetime	4 days	5.5 yrs.
Achlorhydria	4			

obstruction, it is usually impossible to visualize them by fluoroscopy in the erect position, but practically all can be seen if the table is flat or in the Trendelenburg position. As a rule the hernia is easier to visualize by fluoroscopy than by films for the reason that it may not remain above the diaphragm or may not remain filled during the entire time of the observation. In some cases it fills only if the patient is turned rapidly to one side or the other.

Symptomatically a small diaphragmatic hernia must be differentiated from peptic ulcer, gall bladder disease, reflex disturbances of the stomach due to irritable colon, and simple hyperchlorhydria. Large hernias are more apt to cause obstructive symptoms or disturbances in the chest, such as dyspnea, substernal pain, heart pain, or dysphagia. Roentgenologically the smaller variety must be differentiated from cardiospasm with a dilated esophagus and cardioesophageal relaxation, to which Robins and Jankelson[9] have called attention. The large hernias may, paradoxically, be more difficult to diagnose than the smaller type. LeWald has pointed out that thoracic stomach is similar in appearance, but there is no hernia; the esophagus is short, and the pylorus passes through the diaphragm. Eventration of the diaphragm simulates hernia, but the stomach is entirely below a very high diaphragm. Roentgenograms of the chest may show a gas bubble or fluid level simulating pneumothorax or hydrothorax.

The surgical treatment of diaphragmatic hernia has many advocates including Harrington[10], Woolsey[11], Truesdale[12], and others, but these writers are referring to the large hernias where the organs concerned are chiefly above the diaphragm. On the other hand, most of the hernias in this series are small enough not to produce symptoms demanding operation, and they are usually controlled by medical measures. The keynote of medical treatment has been indicated by Sara M. Jordan[13], who has stressed the importance of functional tranquillity in the treatment of abnormal mechanisms. In that sense the treatment here is largely symptomatic. It is of the utmost importance to treat and correct the associated conditions, whether functional or organic. If an ulcer be present, the usual treatment is instituted and as the ulcer symptoms are relieved, the hernia ceases to be troublesome. Irritable or unstable colon is so often present that it must be treated, and in most cases other forms of treatment are ineffective until the bowel is performing normally. It is striking to watch the improvement and disappearance of a patient's complaints of heartburn, substernal distress and pain after eating

TABLE VI

DIAPHRAGMATIC HERNIA

Medical Treatment

Method of Treatment	Number Treated	Relieved	Failures
Hospital Ulcer Management	14	11	3
Hospital Modified Ulcer Management	12	12	
Hospital Bowel Management	14	14	
Ambulatory Bowel Management	11	11	
Total	51	48	3

by the simple correction of a disturbed bowel function and the institution of a bland diet. Table VI indicates the types of medical treatments used. It will be noted that twenty-six cases, or 50 per cent of those treated medically, had some form of ulcer treatment, although the formal Sippy diet was followed in only fourteen cases. The other cases so treated were those with a high acid who failed to respond to a simpler form of treatment. If a hyperacidity is found, it will usually be necessary to correct this by the administration of alkalis. One point of interest is that these cases tolerate magnesia poorly. Magnesia stimulates the colon to overactive peristalsis and increases spasm in the already irritable bowel which is such a common finding in these people. This, in turn, reflexly disturbs gastric motility, and distress is increased instead of relieved. If constipation exists it is preferable to control it by dietary measures combined with antispasmodics rather than by any form of laxative.

Table VII indicates the methods of treatment used in the surgical cases. This group includes two cases that were medical failures. It is noteworthy that one of the cases with an abdominal

repair has since had a recurrence of the hernia, but is having no symptoms of it.

Paralysis of the diaphragm by phrenic exeresis offers a theoretically ideal method of treatment in many hernias where the symptoms persist after adequate medical trial. It prevents motion and consequent pinching by the diaphragm of an incarcerated hernia. Because the diaphragm rises, the hernia may reduce itself in some instances. The cessation of diaphragmatic motion prevents any tendency to pump the contents of the stomach from a region of positive pressure below the diaphragm to a region of negative pressure in the thorax. Practically it has offered a definite cure for the distressing attacks of hiccoughing to which some of these cases are subject, and in the few cases of this series where it was used, it relieved pain and substernal distress as well. Some of the large hernias require no surgical intervention. In particular, extensive surgery is contraindicated if the esophagus is short and there is no obstruction. In the short esophagus type with a large part of the stomach above the diaphragm, torsion may occur resulting in obstruction. Here phrenicotomy or phrenic exeresis may offer a simple, safe, and immediate relief, whereas operative repair of the defect is impracticable.

In table VIII are listed the deaths that have occurred in this series. One was caused by hemorrhage from an esophageal ulcer, from disease presumably unrelated to the diaphragmatic hernia, and two from operative procedures. One of these cases was moribund on admission and had only a phrenicotomy and a jejunostomy in an attempt to relieve a high obstruction. The hernia contained stomach and small intestine. The other case died of postoperative pneumonia.

SUMMARY

Of seventy cases, sixteen males and fifty-four females, there were forty in whom the symptoms suggested peptic ulcer more than any other gastro-intestinal condition. In ten of these, an actual ulcer was demonstrated.

The diagnosis of diaphragmatic hernia is almost solely a roentgenologic diagnosis. Frequently a special technic is necessary to demonstrate the lesion when it is present.

Associated gastro-intestinal complications are common, and may produce the only symptoms of which the patient complains.

Successful medical treatment must be directed at the associated conditions rather than the hernia itself in nearly all instances. Medical treatment is preferable to surgery in most small hernias.

Surgical treatment should be reserved for those cases where medical treatment fails to control the symptoms, and the size of the herniation is not of itself a reliable guide in deciding for or against surgery.

A phrenicotomy is advised as a preliminary to more extensive procedures, and it, alone, may relieve the condition.

TABLE VII

DIAPHRAGMATIC HERNIA

Surgical Treatment

Case No.	Prev. Med. Treatment	Contents of Hernia	Type of Operation	Result	Reoperation
1.	No	Colon, splenic flexure	Abdominal repair	Good	——
2.	No	Stomach, small intestine—strangulated	Phrenicotomy, jejunostomy	Died, obstruction	——
3.	Yes	Stomach	Phrenic exeresis	Good	——
4.	Yes	Stomach	Phrenicotomy	Good for 6 mos., then recurrence	Phrenic exeresis, good result
5.	No	Stomach	Abdominal repair	Recurrence, pain	Abdominal repair, good result
6.	No	Stomach	Abdominal repair	Died, pneumonia	——
7.	No	Stomach	Abdominal repair	Recurrence, no symptoms	——

TABLE VIII

DEATHS

1. Postoperative intestinal obstruction.
2. Postoperative pneumonia.
3. Hemorrhage from esophageal ulcer 7 months after medical treatment.
4. Carcinoma of liver, 5 months after treatment. Location of primary lesion unknown.
5. Heart failure, 6 months after treatment. No symptoms of hernia after treatment.

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CHRONIC ARTHRITIS AND ITS TREATMENT*

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INTELLIGENT discussion of any significant problem provokes innumerable questions. Discussion of arthritis invariably revolves about questions concerning safe, efficacious analgesics for relief of pain; the value of vaccine and intravenous drug therapy; the classification of arthritis by type; the reason for contradictory results of the same treatment applied to individuals apparently showing the same type and extent of arthritis; the different individual reactions to infection; allergy; and diet.

Twenty-four years ago Nichols and Richardson[1] in an article on arthritis wrote:

"*Conclusions:* 1. In non-tubercular deforming arthritis there are two pathological types of joint changes: (1) the proliferative type, which tends to destroy joint cartilage, and leads to anchylosis of adjacent joint surfaces, and (2) the degenerative type, which tends to destroy the joint cartilage, and produce deformity without anchylosis.

"2. These two types do not correspond to two definite diseases, but each type represents reaction of the joint tissues to considerable variety of causes.

"3. In neither type if the original injury is sufficiently severe, or if the causative factor continues to act, is there likelihood of regeneration of a perfect joint.

"4. A joint injury of a sufficient degree, even if the primary cause ceases to act, may of itself continue to act in a vicious circle as a cause of continued joint change.

"5. Clinically the aim should be to recognize the type and stage of lesion present, and then to determine and remove the active cause.

"6. The prognosis should be guarded because of the difficulty in determining the active cause, because of the unlikelihood of complete regeneration of a severely injured joint, and because of the known clinical history of many of the cases."

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Since 1909 progress has been made regarding the general conception and care of arthritis, and in recent years an increasing interest in the subject has arisen; but the actual etiology of the disease and the prognosis of the individual case remain uncertain. Solution of these problems lies in two contemporary lines of research, —laboratory and clinical. To the scientist in the laboratory falls the study of the disease *arthritis;* to the clinician in practice, the study of the *individual* who has joint impairment or arthritis. One is dependent on the other and each is equal in importance. This paper presents the point of view of the clinician, and emphasizes the therapeutic value of the psychiatric approach to the arthritic patient.

Accepting the truth of Nichols and Richardson's statement, arthritis is *one* disease, varying in the individual in different decades, in different occupations, and with different response to infections. (In any number of instances serial radiograms showing both degenerative and proliferative changes in the same patient offer proof of this.) Therefore, *individualistic reaction* being the single generally recognized factor in the arthritic problem, logic points to the *individual* as the centre of concerted study. The first requisite of treatment of the individual is study of the entire body and recognition of all the mental and physical defects. The only way to recognize the physical defects is by most careful and thorough examination and inclusive radiographic and laboratory tests, all repeated at regular intervals. The only way to recognize the mental components of the picture is by gaining the patient's complete confidence and thereby gradually learning the real self of the individual, his joys and sorrows.

The body is a beautifully balanced piece of machinery, and, as in the case of any machine, difficulty in one part inevitably causes difficulty in other parts. Once the perfect balance, homeostasis as Cannon[2] calls it, is destroyed, dysfunction, small or great, in one after another of the various systems, which go to make the whole, follows. The first, tiny break in the machine's perfect mechanism may be no more

than slight environmental maladjustment, domestic friction, or seemingly minor worry. The continuance, however, for any length of time of such mental disturbance may soon be followed by signs of slight imperfections elsewhere in the body. This means that regardless of the particular thing of which the patient complains, joint, heart, or kidney, the first step is to study the patient as an individual, his body in its entirety; his physiology and chemistry; his mind and mental outlook on life; his emotional reactions; his family inheritance, his early environment. The combination of all these factors makes for the physical changes present in the arthritic, who shows a definite psycho-physio-chemical reaction to an unknown quantity X as the original exciter. The important influence on normal body physiology of mental or psychical reaction is well known. In abnormal physiology it naturally assumes greater bearing. For instance, in a diabetic following his routine and practically sugar free, extra fatigue plus a tremendous emotional crisis may precipitate a typical sugar storm. Minor physical reactions to emotional stimulus, such as blushing, tachycardia, or blanching of the fingers, are common occurrences. As the insidious physiologic dysfunctions occur in a potential arthritic, the joint in turn may be affected.

Prolonged work with arthritic patients emphasizes two particular points: first, the fact that the joint involvement is in almost every case but one manifestation of general body dysfunction, with and without actual pathological change (few arthritics show normal function of the entire body); secondly, the fact that *time and patience* are essential in the successful treatment of the chronic case. They are essential, first, in gaining the necessary knowledge of the individual patient through the study of his physical and psychical make-up, and secondly, they are equally essential in making practical use of this knowledge when gained.

The different signs and manifestations of arthritis seen in general practice are too familiar to need detailed description. In the sorry pageant is the individual with repeated mild flare-ups of pains, with tissue congestion but no bone or joint change; the one with moderate intermittent disability and pain, mechanical in origin, due to lipping and spurring of bone in back, hip or knee. Among these is the patient who has probably had degenerative bone and joint change present for a short or long time but has not had symptomatic knowledge of such change. Radiograms of so-called normals have shown this to be correct. If an individual is one of this group, in any decade, activating factors such as exposure to inclement weather, occupational hazards, various infectious irritants, exogenous and endogenous, endocrinal disturbances, or psychogenic imbalance, may precipitate the onset, or produce recurrent flare-ups, of symptoms and signs in already damaged joints. Experience teaches that there is a *natural* duration of such attacks. The average length of an attack, or flare-up, is from six weeks to a few months. Then there is the patient with a single stiff joint; the one with rigid spine, or with spine and hips involved, and finally the one with multiple joint destruction and deformity with associated skin and muscle change. Duration of arthritis does not appear to indicate which one of these courses will be taken; nor is it sufficient in itself to suggest what to expect in the future.

These different final arthritic stages are easily recognized. What is necessary to successful treatment is the ability to foresee, and if possible forestall, the patient's future course when the first vague, or acute, symptoms appear. This again requires detailed knowledge of the patient, through his first few years of life to the moment the physician sees him. Repeated visits and conversations between patient and doctor are required to learn the real life story, the family relationships, early environment, early nutrition, educational opportunity, past history, present illness, and most difficult and most important, the inner self of the patient; his emotional, nervous and mental adjustment, or maladjustment, to life. It is not easy to secure an accurate history from a chronic patient. The first history taken tells none of these things. An initial statement of "No history of shock or worry" is usually disproved after repeated visits and friendly talks between the physician and patient, when confidence and faith have been established, and the self-protective walls the patient has built up have been allowed to disintegrate. This is one reason why the physician must put in ten or fifteen years of apprenticeship with a definite group of patients, and follow them closely, in order to draw accurate conclusions in chronic disease.

ETIOLOGY

As regards etiology of arthritis, undoubtedly heredity plays a part, not necessarily an arthritic inheritance, but the constitutional inheritance, the mental and tissue characteristics to which the individual falls heir. The early absorbed motivations for later living and the nutritional program followed for the first years of life, especially the first, are important. Infection, in some cases particularly, is the definite, additional load which hastens the onset of arthritic manifestations. The arthritic syndrome may appear whether the probable focus of infection is left in the body or is removed. One individual may have a definite endocarditic septicemia or bacteremia and not show any joint involvement. One may show infected teeth, with

pus oozing from the sockets, and no arthritis be present. Another may show a chronic middle ear disease (which means actually reinfection from time to time), tuberculosis, active or inactive, chronic cystitis with pyelonephritis above; or may actually demonstrate after death a variety of focal or generalized infections though he showed no demonstrable arthritis during life. In other words, it is the individual's reaction to infection rather than infection in the individual that is important. Arthritics who have infections present may be reacting to a protein, either exogenous or endogenous. The presence of bacteria in the tissues with no immediate response, functional or pathological change in the joints, indicates the type of tissue (or soil) resistant to, or able to carry, this extra load, whatever protein irritant or unknown irritant may be present in the body. Then *what* changes the tissue resistance to these extra loads, so that it fails to hold them in check, or to render them harmless in the body? Does the answer not lie in general disorder of the homeostasis, and is the response of the body to infection, toxemia or bacteria not due to the homeostatic imbalance rather than to the actual agents per se?

Whereas no one constant etiological cause of arthritis has yet been found; twenty-two or more common factors have been noted in different patients in varying numbers just previous to the development of arthritis. Whether one or more of these factors may be the extra straw that turns one individual into an arthritic, another into a schizophrenic, and a third into some other type of chronic disease syndrome is not known. Study of arthritis along lines similar to those being used in dementia praecox may bring the answer nearer, if attention is directed to the *individual reaction* rather than to any specific agent producing the arthritic process.

Systemic involvement is found in the arthritic irrespective of age or known duration of the arthritis. Changes which involve every portion of the body are noted in different individuals. The very multiplicity of functional disturbances points definitely to the conclusion that there may be no one etiological agent in arthritis, but that the process may follow psycho-physio-chemical changes, in some instances developing upon poor tissue inheritance; in some precipitated by the extra load of bacterial invasion or allergic reaction; but in many the vicious psycho-physio-chemical cycle starts first in the psychical life of the patient after years of inner conflict, maladjustment to environment, thwarted hopes and desires; or nervous shock and strain. A review of the life histories of a group of arthritics shows in many, emotional instability, unfulfilled ambition, defeating drudgery of life, sufficient to account for the initial disturbance of the endocrinal system. Endocrine dysfunction may alter the function of the gastrointestinal tract, the cardiocirculatory system, the liver, the kidneys, or the involuntary nervous system, with ensuing or coincidental joint changes. Many have lived for years preceding the joint manifestations with inner conflicts, unexpressed rebellion against life as it was meted out to them; work when they wanted schooling; repeated, unwished-for child bearing; longing for the big things in life when obviously the little things must be that individual's portion; in short, there is more than sufficient background to produce a body revolt, either cataclysmic, or slow, insidious and progressive.

A reasonable hypothesis arises at this point. If one accepts the broad separation of peoples into introverts and extroverts, may it not be that the introvert reacts to overwhelming odds by a psychopathological response whereas the extrovert obtains the same relief from responsibility through a joint, or arthritic, reaction? Comparison of the dementia praecox, or schizophrenic, patient with the arthritic brings out interesting points of similarity, the difference being the outlet thrust upon the individual. In one, dysfunction of the personality predominates: in the other, dysfunction of the bone and joint furnishes an unrecognized alibi for withdrawal from active life, or a means, through capitalizing disability, of gaining attention which had been previously unobtainable. From the broad biological point of view all such reactions must be regarded as fundamentally purposive.

Hoskins[3] has written on the "Schizophrenia Problem from the Standpoint of the Investigator." With a few changes and a few additions, the etiologic factors listed by Hoskins as potentially important in the schizophrenic might well be transposed for those of the arthritic. He lists: Emotional conflicts. Withdrawal of interest in environment and transfer to phantasy life. Bad mental and physical habits. Industrial and social maladjustment. Structural defects of body. Defective brain metabolism. Abnormal endocrine function. Autonomic nervous dysfunction. Cardiovascular insufficiency. Defective gastrointestinal functions. Liver dysfunctions. Abnormal mineral metabolism. Disturbed acid-base equilibrium. Vitamin deficiency. Infectious and surgical disease. Other metabolic disease.

SUMMARY

This view of the arthritic problem may be repeated in one sentence: *Study and know your patient thoroughly from every avenue of approach.* If the physician develops a scientific type of mind, the emotional checkreins will not hinder him from attempting to obtain every bit of information possible about a patient. With this as a basis, a practical outline of living may then be built. The patient's problems cannot be dismissed by saying, forget it, or we won't dis-

cuss the matter, if it happens to be an unpleasant sex incident; or even by the mere recognition of the problem without offering a practical solution. Never pry into a patient's inner soul and mind, and, because you are at a loss for a remedy, leave him stripped bare. Do not use psychotherapy at all unless prepared to carry through to a solution each contingency as it may arise. The general practitioner, or internist, must take the time with each patient to obtain this history in detail; he must know the man or woman as a human being; must know his background, his early environmental influence. He must gain the patient's confidence, and this requires patience, until that individual knows he has found that for which practically every chronic disease patient actually yearns, i.e., some one genuinely interested in himself, his trivial signs, symptoms and problems. This means of course unhurried talks frequently repeated. However, since the chronic, whether his immediate problem be joints, heart or other system, almost invariably shows dysfunction of several body systems, it is evident that such multiple change requires the knowledge and help of as many specialists as there are fields involved. Equally evident is the fact that each specialist tends to see the patient in the light of his own specialty, and unconsciously emphasizes that part of the body. The internist's job is that of liaison officer, or pilot. He must see the patient as an entity, and must keep the balance, so that undue emphasis is not placed on any one part to the neglect of another.

TREATMENT

Treatment of the arthritic first and always must be recognized as individualistic, not from the point of view of the physician prescribing treatment but from the point of view of the patient receiving it. The altered function of the many different body systems shown in each individual patient makes it obvious that no one drug, no one form of treatment, can be omnipotent to stimulate and restore to normal all the various systems involved.

Certain measures are practical and of definite value. Their value to the patient's immediate relief is possibly indirect, but still definite; their primary importance is to aid in arriving at an early diagnosis. There are serial tests of various kinds, adequate and comprehensive enough to enable the physician to differentiate functional and pathological signs and symptoms; and to determine accurately the time at which pathological change may supervene on previous functional abnormality. So many of the complaints of the chronic patient have been found to be due to functional disturbance of a particular system that the danger becomes real of overlooking changes which may not be functional. No symptom or sign should be considered as merely functional until pathological change has been absolutely ruled out. Such serial studies should include radiograms, not only of joints, but of the skull, brain, chest and gastrointestinal tract, as well as the genito-urinary tract when indicated. Serial radiograms demonstrate the development of sclerotic changes[4]. After radiographic technique has been standardized vascular changes may be recognized before calcification of the vessels has become actual, and in time prevention of such calcification may be possible.

The blood count should be checked at six-month intervals at the longest. Chronic arthritics show a definite tendency to anemias. Certain blood chemical determinations, such as sugar tolerance, cholesterol, nitrogen metabolism and sedimentation rate should be made and repeated periodically. Kidney function should be further tested by frequently repeated urinalyses, by phthalein tests, and by the concentration and dilution test[5].

Photographs of the patient in the nude record year by year the changes, whether for better or worse, in posture, motion and deformity of the joints. Such photographic records are bound to be more accurate than verbal description. (Their accuracy depends naturally on the way the photograph is taken. For instance, if measurement of permanent flexion deformity of a knee is desired, the patient must be lying on a firm surface, not on a soft, yielding mattress, when the photograph is taken.)

All these tests or measurements, repeated at regular intervals, will help to clarify many existing impressions, and may shift them from the column labeled *impressions* to one labeled *facts* in the ledger of clinical medicine.

SUPPORTIVE MEASURES

Supportive, stimulative treatments are very essential. One of the first of these is *rest*, general and local. A precise presentation recognizing the value of rest to relieve pain was written years ago by Hilton[6]. Today this fact is still appreciated. If one single remedial agent in the treatment of arthritis were to be chosen, *rest* would certainly be the one selected[7]. Routine rest periods must be prescribed and planned as any other form of treatment. Two forms of rest have been mentioned, general and local. There is a third, *rest of mind*. Often rest of mind is secured only by genuine psychotherapy.

Exercises, also general and local, supervised, and sufficient to increase the tone of the muscular system, are equally important. Voluntary daily movement of each joint for a few minutes should be a part of the daily routine. The number of the exercise periods and their duration depend upon the individual's reaction. Increase in pain, muscle tremor, trembling, shaking, etc., after a few such motions indicates less frequent and shorter periods; gradual increase

should again be attempted as the signs of overfatigue subside. Massage has definite, measurable, subjective and objective value if given by a competent physiotherapist. Heat in any form which is most comforting to the patient is useful.

ALLEVIATION OF PAIN

The patient consciously wants two things, relief and freedom from pain, and avoidance of future crippling. (Unwittingly he may want, what he practically always needs, mental and emotional outlet and rehabilitation.) Opiates take first place for relief of pain. Any analgesic which is effective in alleviating pain in an individual patient is the one to use for that patient, provided it has been proved harmless. The dosage of any drug should be that sufficient to produce the desired pharmacological effect. If more opiates were used to relieve pain possibly less joint deformity would occur in the arthritic, particularly if used during the acute stages of the disease when the one desire is to find a comfortable position for an aching joint, or during the time that corrective plaster casts are first applied. This new and sometimes uncomfortable or painful position of a joint, necessary in corrective and preventive work, will be better tolerated by the patient and will be maintained for longer periods if sufficient medication is administered to obliterate the ache. Obviously the administration of sedatives and analgesics demands good judgment and experience on the physician's part.

VACCINE THERAPY

There may be a certain amount of improvement obtained in some arthritics through vaccine therapy. However, one must remember that this vaccine therapy is not specific, or at least has not been so proved conclusively to date, nor has it been proved more beneficial than oral medication. In gauging the efficacy of any treatment one should bear in mind the average duration of the usual joint flare-up, from the time of its onset to the time of its subsidence. The result of a specified treatment should be tested to see if this expected period of relapse has been shortened; if the interval period of remission has been lengthened; or if the frequency of relapse has been decreased. As a rule the best results of vaccine and intravenous drug therapy occur in the so-called mixed type of arthritis, where to underlying hypertrophic or degenerative changes with no joint symptoms has been added irritation resulting from reaction to infection, strain, fatigue, etc. Such a combination is apt to run its course whichever irritant is present, and at the end of the flare-up the joints usually resume practically their former function. Six weeks to three months seems to be the average duration of such a flare-up if it is due to one application of a single exciter. On the other hand, if the preëxisting, inactive degenerative changes are transformed into an active arthritis by multiple, or repeated irritants, the definite period of flare-up is lengthened, and may become a permanent condition with progressive joint involvement. If vaccine or intravenous therapy is used in this type of individual, and improvement is noted at the end of say, sixteen injections given at weekly intervals, the physician may well question whether his treatment per se caused this improvement.

However, if real benefit to the patient by vaccine therapy is proved, the results must be related in some way to the protein introduced into the body, and the body's reaction to it, which for want of a better term we may call allergic response to a protein. In other words, an element is introduced which the body's normal autonomic system does not handle without producing certain changes elsewhere in the body. Desensitization means the introduction over a fairly long period of time of certain substances which are irritants. Even when this desensitization has diminished the sensitivity of a joint, the arthritic element is not altered. Pain may be abolished and greater functional range of activity may be obtained but actual joint change, if present, remains constant. It has been suggested by some writers[3] that minor allergic reaction, or positive sensitiveness to certain proteins, may vary from month to month. If this is so, it seems more reasonable to use what is known to be harmless, such as milk or peptone, or milk protein, than to use actual vaccine of suspended dead bacteria in saline solution, or mixtures of antigens which at times produce a disagreeable systemic reaction.

DIET

Dietary information is sometimes difficult to obtain from the patient. This is made more accurate if he is asked to keep a daily record of the actual food and liquid ingested, and such records over a few weeks' time are studied. In the matter of diet, the points to be remembered are attractive preparation and serving of the food, as well as its fundamental wholesomeness. The quantity given should be that which will give adequate nourishment to the individual involved. As there is no one drug for arthritis, so there is no one diet for all arthritic patients. However, the accepted diabetic diet seems a good basis on which to build the individual arthritic diet. Modifications are necessary. In one patient the protein should be increased; in another, the carbohydrate should be decreased, depending on that individual's ability to handle sugar and utilize it in whatever form it is given. In others, it is well to reduce the cholesterol intake because of its uncertain

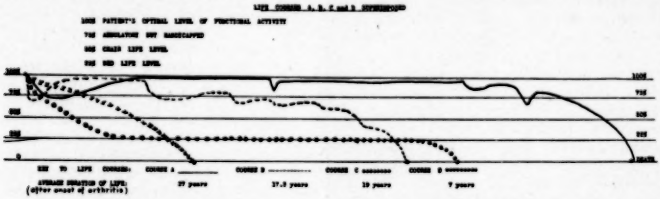
effect in the production of arteriosclerotic changes in certain individuals. Liquid intake should not exceed six to eight glasses a day, and this amount should include fruit juices, water, soups and milk. This restriction of fluid is suggested especially in the overweight patient. Excessive liquid does not produce firm muscle, solid sound tissue, but produces an unstable labile matrix.

DEFORMITIES: PREVENTION, CORRECTION AND OPERATIVE INTERFERENCE

To the orthopedic consultant falls a large and important part of the successful treatment of arthritis. On him devolves the task of preventing joint deformity if possible, correcting it when it has occurred, or if it occurs in spite of attempted prevention. The medical man's treatment of deformity consists of a few very simple things, simple because they are so obvious so far as indication is concerned, but far from simple when it comes to application and the production of results. They are usually preliminary to the orthopedist's arrival. The first is alleviation of pain; the second, reduction of congestion and swelling; the third, maintenance of the affected joint in the best postural position possible, so that if ankylosis must occur it will at least occur in the most practical and serviceable position for the patient.

Surgery is usually necessary to correct real deformity. This in competent hands has proved of inestimable value, not only in restoring function to the particular joint operated upon, but in rehabilitation of the patient. In some instances, he may be enabled to retake his place in a competitive world; in another he may return to an ambulatory existence after years of chair life; or, in a third, he may regain only the ability to feed himself; to do small personal things with arms which had before been helpless. All these things do more than restore that particular lost function; they restore the individual's self-respect, give him back a certain degree of independence and self-respect, and at least promote partial independence. These are attributes essential to everyone's morale.

The decision as to the suitable time for such operative interference is in my opinion as important as the operation itself, and this decision must be made by the physician who has had charge of the case, he who has knowledge of the entire picture with all its interrelated intricacies and disturbances. In this connection, an interesting point was brought out in recent study made in connection with the Robert B. Brigham Hospital Survey of Chronic Disease[9]. The life courses followed by ninety-five dead arthritics showed four distinct and different curves. Course A represented a patient who with the onset of arthritis dropped to a lower level of activity; remained there for a time, then climbed back toward his former level and stayed at this level through the greater part of his remaining life. Course B showed a life course made up of definite periods of remission and relapse, and as the years passed, the trend gradually downwards, with lengthening and more frequent periods of relapse and shorter and fewer periods of remission. Course C showed a tremendous drop in the life line, over a variable period of time, from the expected 100 per cent of



THE FOUR TYPICAL LIFE COURSES SUPERIMPOSED ON ONE ANOTHER.

activity to a 50 per cent or 25 per cent level, because of extensive joint destruction and crippling; and the remaining life spent at this low level, often for years. Course D showed a course which progressed steadily downward to death, without appreciable remission, regardless of treatment or any one particular factor.

Studies of the histories of these patients with their different reactions indicated that an individual followed a certain Life Course irrespective of age, duration of arthritic symptoms, or so-called type of arthritis. The Course D group particularly demonstrated this fact. In it were patients from almost every decade of life. Both the young and the old in this group showed at death surprisingly comparable pictures in regard to age of bone and tissue; both failed equally to respond to any treatment; both made (for an arthritic) a relatively rapid journey to the grave. Operation on one in this group appeared to be a mistake; in each instance it merely hastened the patient on his downward course. Another impression, not fact, gained from the study, was that operation on an individual following Course C, if undertaken at an opportune moment, might well raise him to a modified

Course A. If several operations were required for reconstruction it seemed that the interval between should be at least one year.

PSYCHOTHERAPY

Psychotherapy has been left to the last because special emphasis is laid upon it. It is the treatment which should be instituted first, from the moment of contact between doctor and patient, running parallel to all other forms of treatment used. The better the understanding developed between the physician and patient, particularly the chronic patient, the better the result obtained. So often one finds in the discharge note of a chronic patient the words, "Discharged against advice"; "Discharged because of lack of coöperation"; "Refused treatment", etc. Doubtless all these accusations are true, but do they not reflect on the physician as well as the patient? Do they not represent but another factor accompanying the make-up of the "chronic", another systemic dysfunction needing treatment? Is not the mere fact of such summary dismissal from a hospital ward, because of one of these charges, admission of failure on the doctor's part? Does it not indicate ignorance of, or failure to deal successfully with, problems of behaviour and psychoses of varying degrees? If for no other reason than this, one cannot emphasize too strongly the value of greater study and practical use of such psychotherapeutic measures ready at hand to the average practitioner of medicine. The former family doctor had not the advantage of much of our present-day knowledge, but he was ahead of us in the matter of thorough intimate understanding of his patient.

Of what use is it to cure a body if a mind is left ill? Certainly it is not enough to arrest or cure body disease if the motivation for living is ignored. Psychotherapy is stressed because in many arthritics, particularly in the so-called rheumatoid, or the patient showing proliferative joint changes, the physio-chemical changes in the body appear to *follow* psychical changes; endocrinal dysfunction ensues, and subsequently the body systems so controlled are affected insidiously. Hence if one undertakes the treatment of chronic disease he must be prepared to give the time and patience necessary to this form of treatment.

CONCLUSION

Outstanding important points emphasized in this paper, which heretofore have not been stressed sufficiently, are the following:

1. The possibilities for research offered to the medical profession in the arthritic field along both laboratory and clinical lines. Clinical study, such as is here presented, emphasizes the need of long-time observation of the same group of patients before accurate conclusions can be drawn. Conclusions drawn from a composite picture made up of segments culled from different groups of patients in different decades and at different stages of disease can never be accurate.
2. *Rest* is the single outstanding therapeutic agent whose value is accepted by all. Physical and mental rest and relaxation are interdependent and are of equal importance.
3. Successful treatment of arthritis demands measures to relieve pain. In addition to humane considerations, the relief of pain is of primary importance because it breaks into the vicious circle by which the arthritic condition is perpetuated and facilitates the reparative processes, mental and physical. Rest, analgesics and opiates are all required in some patients to achieve freedom from pain.
4. To date, all roads of clinical investigation have converged at the *individual* and his *variable reactions* to heredity, nutrition, occupational hazard, weather conditions, infectious irritants (exogenous and endogenous), environment, and psychogenic factors. In one individual, one such stimulus acts as the excitor precipitating him into the arthritic syndrome; in another, the same stimulus may produce schizophrenia; or, the combination of several stimuli may be required in another to develop arthritis. The point of importance is that the *individual* holds the key to the puzzle, and only study, and intimate knowledge of the individual will provide the answer. Genuine psychotherapy gives the physician the knowledge, and the patient the aid, which each seeks. Though such treatment requires time, and the results seem intangible and immeasurable, the time will be well spent if definite, lasting *physical* results follow the recognition and restoration to normal of disturbed mental and emotional reactions.

"One of the essential qualities of the clinician is interest in humanity, for the secret of the care of the patient is in caring for the patient."[10]

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THE TREATMENT OF CONSTIPATION

BY ALLEN G. BRAILEY, M.D.*

IT is quite probable that a greater total of impaired health is due to functional than to organic disease. Yet the treatment of functional conditions has lagged far behind that of the organic. Among the reasons for this lack of progress is the fact that it is often hard to discover the precise defect in the patient's personality, habits, or environment which cause his symptoms and, furthermore, that successful treatment requires his understanding and active coöperation, whereas the treatment of organic disease often requires only his passive assent. Thus, the correct diagnosis and treatment of acute appendicitis is not much more difficult in a person of low mentality than in the highly intelligent. The successful treatment of functional troubles is often a greater challenge to the ability, patience and ingenuity of the physician than is the dispensing of the proper remedy for better understood diseases.

Repeatedly in the history of medicine, groups of conditions have been poorly treated until one or more definite syndromes has been clearly separated from the mass and its cause discovered. For example, the group of conditions now recognized as due to hyperparathyroidism remained obscure until recent years, but now this disease is as easily diagnosed and treated as is exophthalmic goitre. In a similar way, with further careful study, many functional disorders may be expected to fall into categories with relatively simple causes and yield to fairly standard treatment. The functional disorder of the gastro-intestinal tract, variously called constipation, unstable colon, unhappy colon, etc., is one such condition which, I believe, is now ready for clearer understanding and more rational treatment.

A. CAUSES OF CONSTIPATION

Four years ago, while working in the outpatient medical clinics of the Massachusetts General Hospital, I became impressed, first, by the large number of patients who said they were constipated; secondly, by the fact that they had usually treated their symptoms themselves or with the help of the drug clerk, and, thirdly, that we doctors, ourselves, often showed rather little interest in the complaint and had developed no generally recognized best method of treatment. The importance of constipation has been variously estimated in the past, from the view that it never leads to organic disease, to the teaching of Sir Arbuthnot Lane and his school that constipation is an important predisposing cause of such diseases as tuberculosis and cancer. Even if one believes that constipation never causes permanent injury to the body, one must still admit that it does cause its victims a great deal of mental and physical distress, often daily and for a period of years and, therefore, it ought to have the interest of the profession.

Each person complaining of constipation was questioned as to what he meant by the term; as to the onset, duration and treatment of his complaints, and, finally, as to his daily habits of work, rest, diet, exercise and toilet. It appeared that nearly everyone meant, when he said he was constipated, that, if he stopped taking cathartics, his bowels did not move during the next twenty-four hours. He was always astonished when told, as pointed out by Alvarez[1], by Burnett[2] and others, that food takes from two to seven days to make the voyage of the intestinal canal in normal persons. With many of these patients, months had passed since they had given themselves an opportunity to demonstrate whether they were truly constipated. They also complained of fatigue, lack of ambition, mental depression, occasional vertigo, foul breath, eructations and abdominal distress and distention.

The time and conditions at the onset of these complaints had often been forgotten. Thaysen[3], in a study of 375 constipated persons, found that the symptoms were well established before the twenty-sixth year in about three-quarters of them. When the onset could be definitely recalled, it was striking how often it appeared that their trouble began when they moved from one town to another, changed the nature of their work or were confined to bed for a time with some illness. Often they had taken laxatives daily since these upsetting events occurred.

A study of the daily habits of these patients gave interesting results. Persons who felt that their bowel action was normal and satisfactory were almost invariably found to live quite routine and scheduled lives. For instance, most business men with normal habits quite habitually rose at 7 A.M., shaved, ate breakfast, ran for the train and went to the toilet on reaching the office. Usually it would prove that lunch came regularly at 12:30 P.M., dinner at 6 P.M. and bedtime fairly regularly at 11 P.M. They often added: "I sometimes have no stool on Sundays and I am apt to be constipated during vacations."

Persons with constipation, on the other hand, almost invariably gave a story of irregular days. If they had entertained late in the evening, they slept later next morning or had breakfast in bed. Luncheon at home was served at 12:30 P.M. but luncheons out were served at 1:30 or 2 P.M.

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Tea proved a variable feast, usually being served only when there were guests. They went to bed when they were tired anywhere from 9 P.M. to 1 A.M. They visited the toilet with complete irregularity. This irregularity of the toilet hour is an interesting phenomenon. Most fastidious people change their clothes, bathe and care for their teeth and nails according to a quite regular schedule. Yet this very essential act of elimination is left entirely to the whim and caprice of rectal sensation. Persons who work nights or who work on alternate morning and afternoon shifts are especially prone to constipation.

Gradually, I formed the impression that, although there are probably many factors which help to maintain constipation, the chief one is lack of habit. It is at least possible that the regular daily defecation of the normal person is an example of the conditioned reflex of Pawlow. So long as the toilet visit occurs in its regular, customary place in the daily sequence, success is assured. In the constipated person there is no regular sequence. He waits until he has an imperative urge to stool and visits the toilet at very variable hours. In fact, if he is taking catharties, the normal progress of his entire intestinal activity is more or less continuously upset. First, he takes a chemical or mechanical irritant which lacerates his intestinal mucosa sufficiently to produce one or several loose stools and, before the tract can return to its normal condition, it is usually purged again.

B. PLAN OF TREATMENT

In seeking to help these persons complaining of constipation, this plan was followed: By dint of careful history and physical examination, including rectal examination and often a barium enema and gastro-intestinal series, the possibility of organic cause for their distress was ruled out as carefully as possible. The many lesions of which constipation may be a symptom have been repeatedly listed in the literature and need not be discussed again now. Two conditions which are sometimes not sufficiently considered may be mentioned. Dr. E. P. Hayden has called to my notice the importance of rectocele as a cause of rectal constipation in women, the rectum being mechanically unable to empty itself. Dr. Langdon Parsons[4], in a paper recently published, has pointed out the surprising frequency with which some disturbance of bowel function is the first symptom of carcinoma of the stomach. When convinced that his symptoms were of functional origin, I have then sat down with the patient and explained to him something of the physiology of the intestinal tract and the origin of most of his symptoms in irritation of the intestinal mucosa[5]. I have tried to dispel his fear of constipation and to engage his enthusiasm and coöperation so far as possible. This step is time-consuming but I believe that it is absolutely essential. The patient will not embark on the program to be described if he does not understand and sympathize with the theory and plan of the physician. The patient has then been given written instructions as follows:

(1) Have regular hours for sleep and particularly for rising in the morning.
(2) Eat three meals at regular times every day with no nibbling between meals. (The menu is not stressed except to discourage the use of any excess of roughage for its laxative action.)
(3) Drink at least eight glasses of fluids daily. (It is reasonable to suppose that, if the body is not well supplied with water, relatively more fluid will be absorbed from the intestinal contents and leave them abnormally dry.)
(4) Take at least thirty minutes of work or play daily, preferably out-of-doors and sufficiently energetic to produce a little breathlessness and start palpable perspiration.
(5) Visit the toilet for stool every day after breakfast whether any urge is felt or not. Stay there (without straining) fifteen minutes unless a thoroughly satisfactory result is achieved in less time and, when this period is over, do not return until the next day at the same time if it can be avoided.

In only two instances was the above treatment modified in any way. One young woman, examined by barium enema, in spite of the usual preparation, showed retention of impacted scybala. These were removed by repeated gentle enemata before beginning the program of habit training. I doubt if this precaution was strictly necessary but it probably spared her a few days of difficult stools before her regular habit was established. One elderly lady had considerable mucosal irritation as evidenced by excess of mucus in her stools and areas of muscular spasm of the colon which were demonstrated by the barium enema. Her progress toward a normal bowel habit was accelerated somewhat by the use of belladonna. She was given ten drops of the tincture before meals three times daily for about two weeks.

C. RESULTS

Thus far there have been thirty-seven private patients who coöperated well and whom I have been able to follow satisfactorily. All are now symptom-free, most of them after only a few days to two weeks of treatment. Of patients seen in the Outpatient Department of the Massachusetts General Hospital, only twenty-nine coöperated well and returned for follow-up examinations. Of these, twenty-five are now symp-

tom-free and consider themselves well. Of the remaining four, one only came to the clinic twice and there is perhaps some question whether she did faithfully carry out instructions. The other three were very nervous and emotional women with backgrounds of financial and domestic unhappiness. Even though not cured, they take only very small doses of mineral oil and feel much improved, which suggests once more that the symptoms associated with constipation are due, more often, to the irritation of repeated catharsis than to the irritation of retained intestinal contents. The nervous and emotional background of the patient[4] is important, of course. But how often is the tendency of nervous people to constipation due to the fact that it is especially these people whose lives and habits are chronically irregular and poorly ordered?

This series of patients is too short to deserve detailed analysis. Persons of all ages are represented from the second to the eighth decades inclusive. The two oldest patients, one man and one woman, were both over seventy years of age and had both taken some cathartic regularly every night for over forty years. They were both rid entirely of their symptoms, their constipation and their pills at the end of one week. Suffice it to say that I have found no evidence, thus far, that age, duration of symptoms or previous therapy has any important effect on the results of treatment by this method. The one essential factor seems to be the willingness and the ability of the patient to coöperate faithfully in the development of a regular and normal stool habit.

I was greatly encouraged on reviewing the literature to find that this view of constipation and method of treatment are not at all new and that there are several published accounts of their successful application. So far as I can find, they were first formulated by Dr. Paul Dubois of Paris in 1886 and discussed in more detail in his "Psychic Treatment of Nervous Disorders" published in 1906[7]. Dubois stated definitely that the great majority of constipated persons could be cured by this method. Lyon[8] in 1908 acknowledged his debt to Dubois and adopted his method of treatment. Of 69 patients treated, all but one were completely cured without medicines of any kind. Marshall[9], in a very interesting paper, referred to the work of Dubois and Lyon. His treatment is essentially that outlined above.

In spite of these satisfactory reports and of a fairly general recognition of the importance of regular habits, constipation is all too often poorly treated. It is hoped that many physicians may be encouraged to make a careful and thorough trial of this method of treatment and establish its importance by publishing their results.

SUMMARY

1. It is suggested that so-called constipation, not due to organic disease, is the result of lack of a regular toilet habit.
2. An outline of treatment based on this concept is given.
3. All of thirty-seven private patients and twenty-five of twenty-nine outpatients, treated in this way, were entirely relieved of their symptoms without the use of medicines, lubricants or enemata.

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NOTES ON THE TREATMENT OF LEPROSY

BY CYRIL E. BOUSFIELD, M.D.*

FOREWORD

Dr. Cyril E. Bousfield has given the best part of his life to medical service in China. He leaves his isolated and harried hospital very occasionally, and then only to learn new methods of medicine and surgery. He must practice them often in great danger. The section has been infested with bandits, and misunderstandings of the new western ways seem endless. His religion makes him unafraid, and his knowledge gives him confidence. There is no reward of acclaim or wealth. It is a service of as fine unselfishness as the world knows, demanding courage and resourcefulness, wisdom and patience. Dr. Bousfield's brain contemplates and weighs, his hands do brave and delicate things,

WHATEVER difference of opinion may exist concerning the religious value of foreign missions, there can be no doubt as to the social value of the medical missionary. In remote regions where abject poverty is the lot of the masses, religion and medicine may well walk in the closest company, and serve in the most complementary manner. It has been a great privilege to know and to feel the spirit and skill of the writer of this article on the treatment of leprosy.

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his feet are solidly on the ground. Withal he is one of the happiest and gentlest of men, who is making a high score with the Recording Angel.

R. B. O.

IN these days it is a common statement that 95 per cent of the early cases of leprosy are curable. The writer has been treating leprosy for about twenty years but it was with poor success until the ethyl-ester of chaulmoogra oil became available. With the preparations now procurable it is possible to do very much better than just the 95 per cent mentioned above.

For convenience we may divide leper patients into four classes:

(1) Early cases, by which we understand those in whom the disease has gained only sufficient hold to make a certain diagnosis possible.

(2) Moderately advanced cases, such as patients who can be recognized as lepers at a glance. They are able to work as usual, but may have one or more ulcers. They may have the so-called leonine expression, and have lost much of their eyebrows, but their activities are not yet limited by their disease.

(3) Advanced cases. These have huge stinking ulcers, but have no edema and can still work.

(4) Patients in the last stages. In these the heart is beginning to fail, and their resistance is broken, so that they do not react to any treatment.

Taking this classification, our experience during the past two years has been that 95 per cent of the moderately advanced cases and at least 75 per cent of the advanced cases are curable. Those patients who are not curable are lost because of some other intercurrent disease, as malaria, pneumonia, etc.

In our experience successful treatment depends on a careful study of each individual case. There is no routine treatment which is the best for all. Some do much better on one preparation and others on another. Great care is also needed to find the optimum dosage for each patient. For instance, we had one advanced case which a casual examination would place in the last stages. We began with alepol, an ethyl-ester of chaulmoogra oil, put out by Burroughs, Wellcome & Co., and gradually increased the intravenous doses to 13 cc. of a 3 per cent solution, once a week, which is more than twice the maximum dose recommended by the manufacturers. This I further supplemented by giving him per oram another 6 cc. of the same, some to be taken after each meal and mixed with enough water to last him a week. He also had regular dressings for his ulcers as long as needed. Ulcers 12 cm. long healed up in a little over a year. The majority of patients, however, cannot be given more than 10 cc. once a week, and some not more than 5 cc. If the reactions are too severe they do not seem to profit by the treatment, and the dosage must be reduced before they gain. Some improve faster on 6 cc. than others on larger doses. If they cannot bear doses large enough to make a reasonable gain, we shift to another preparation of chaulmoogra oil, or supplement the treatment by another drug. The iodized ethyl-ester is extremely useful in skin lesions. At a sitting ten or fifteen or even more intradermal injections, each of 0.1 cc., may be given. These are very effective so that almost any skin lesion will clear up after a month or two, but without other treatment a relapse is certain to occur. If larger doses of the iodized solution are given, nervous symptoms soon appear, and further treatment with it must be discontinued, or reduced and supplemented by another preparation.

On this patient's hands, where there is now healthy white skin, there was a mass of stinking ulcers.

Everyone who treats leprosy has his own favorite drug and method. We have found the alepol, given intravenously, the least painful and generally the most effective of our whole armamentarium. It has the great disadvantage of obliterating the veins. After a few months of treatment it becomes almost impossible to find a vein anywhere in the whole body, in which case it becomes necessary to substitute intramuscular injections, giving a series of 1 cc. or less in various parts of the body, preferably near an ulcer if there is such. If a patient happens to have varicose veins, you are in luck so long as they last, which unfortunately is not long.

It is generally stated that leper patients react badly to mercury and arsenic. The contrary is true in our cases. Indeed it is a frequent experience when a patient is not gaining as he should, to find that a few doses of one or the other will cause him to again begin to gain. This has happened so often that we are giving more and more mercury to almost all of our leper patients. It is true that many lepers are syphilitic, and need mercury and arsenic for that reason, but those who are not are indubitably helped by it. The

arsenic preparations used are neoarsphenamine and sulphotreparsan, and the mercury used is Burroughs, Wellcome and Co.'s avenyl, a mercury preparation made especially for leprosy, and Parke, Davis & Co.'s mercurosal, or mercuric iodide or mercurous iodide per oram. It may here be noted that when we give the pure chaulmoogra oil, we give only the very best obtainable. Years ago many of my leper patients suffered intensely and I failed because I used any oil that happened to be on the market. For some of our patients hyrganol seems best. It is a French preparation put out by Poulenc Frères, Paris. I have tried quite a few others, as sodium gynocardate, and sodium morrhuate, put out by Smith, Stannistreet, Co., Calcutta, but with poor results. Recently solganol, a German gold preparation, has been very highly recommended. We have tried it out on two cases only, for it is very costly. In both, the euphoria it induced was really remarkable. The two patients were very enthusiastic about it, but I could not see any improvement which would justify its continuance. Probably the ideal method would be to use it in addition to the regular drugs.

This shows how the process of destruction stops and even though the ends of the fingers may be lost, they heal up entirely.

It is unnecessary to mention here the importance of ridding these patients of helminthic infestation, malaria, syphilis, etc., when present.

In China, at least, leper patients differ from all others in many respects. They all not only have an inferiority complex, but in addition they fear the rest of their race. They are shunned and avoided till they are ready to prefer death to life. Then, as they become hardened to the attitude of others, utter indifference to all decency and respectability is liable to supervene. When an early case comes he will often throw himself at your feet, and with tears streaming down his face, implore you to save his life. When the disease has advanced, they come in a dull despair and ask you to help them, in a way that makes you think they have no hope of your being able to do so. The practice of the present Government in China, in many places, of shooting all lepers, helps to aggravate their mental attitude. However as they see themselves really being healed, this is quickly changed. They get new clothes and clean themselves up till sometimes you hardly recognize your own patients.

When treatment is undertaken, success depends, at least in our experience, on a careful study of each individual case, and in making the patient feel that he is responsible for his own cure, and you are just going to help him to recover. He is warned that it will be a long, hard fight, but that he will surely win if he is willing to pay the price. They are more coöperative than most patients and more grateful for what you do for them, than any other class of patients I have met anywhere in the world. I always make it a practice to ask them carefully about the reaction to the last treatment, and about the pain, if any, caused by it. I tell them what medicine I propose to give them, and to keep in their minds the idea that they are responsible for their own cure, I ask them if they want it or something else. By this way you get them to take better care of their ulcers, diet, etc. The work is often extremely unpleasant, and the stench of the ulcers, in some of the new cases, is too horrible to describe to those who do not know of it, but it is our job, for the Master said, "Cleanse the lepers," and there is real joy in seeing a disease conquered which for ages has been esteemed incurable.

THE FAMILY DOCTOR*

BY ORAN A. MOSER, M.D.†

THE practice of medicine is one of the greatest of the professions, and the family physician is and always will remain the most necessary part of the medical profession.

As the young graduate ponders over the problem of which branch of the profession he should enter, he gives thought to the long and uncertain hours and small fees of the general practitioner and does not find the prospect attractive. In comparison, the shorter office hours and regular routine, with larger fees, of the specialist appear more alluring. Consequently there has developed a situation in which there are too many specialists as compared with general practitioners. And yet I would not advise any young graduate to attempt to become a family physician unless he can love that branch of the profession. He who puts financial gain ahead of

*Address delivered by the retiring President of the Hartford (Conn.) County Medical Association at the one hundred and forty-second annual meeting.

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personal service will almost surely make a poor family doctor. Many of our leading specialists were formerly good general practitioners and then concentrated their efforts to the one branch of medicine in which they could excel and serve humanity best.

Some may think it hard to be called at night to attend the sick, but the joy the family doctor often feels when he has made such a call possibly saving a human life or relieving suffering, is well worth all the hardship; even if the small fee earned is never paid.

Early in my professional career I decided that I would rather be known as a good successful general practitioner than as a poor governor of the state. I cannot imagine any profession more self-satisfying than that of a family physician who cares for his regular families one decade after another; assisting the babies into the world, and easing the pains of the aged dying. The family doctor soon gains the love and respect of the entire family, sharing with them life's joys and sorrows. Each member of the circle confides in him and seeks his advice, well knowing that the one who helps to keep his body healthy and his nerves steady can be depended upon for unlimited sympathy and complete understanding.

Then, too, the practice of medicine in country districts is, I believe, more interesting in many respects than in large centers of population, as the more we must rely upon our own resources the greater the challenge to our capabilities. Extremely difficult cases act upon our interest as spice in our food. Dull indeed is the day when the family doctor treats only common cases.

It is a pleasant memory to recall being summoned in the night to a home reached only over roads that were impassable except to a horse, to find there a foreign-speaking woman who had been in labor for two days attended by a so-called midwife who fled when a little hand appeared. There was no one to assist and only one small dim lamp and one rusty pan for solutions; black dirt of many weeks' or months' accumulation on body and limbs; the uterus in constant contraction and the patient refused the use of drugs or anesthetics. (The mother and baby made an uneventful recovery.)

Then again a fractured femur or shattered tibia in homes too poor to afford even hospital expenses, taxes one's skill to get perfect results with few facilities at hand with which to work.

Nor need we be offended when asked by an elderly man, living alone and too poor to pay a veterinarian, to save the life of his only companion, a collie dog with ten little puppies, by applying a cast to a badly fractured hind leg. (Most satisfactory was the result. Complete recovery of the dog, and a grateful man.)

One of the most challenging realizations to the general practitioner is the fact that he must attempt to know something of every disease which afflicts the human body and that consequently he can scarcely excel in any one thing. He must therefore look around and recognize those of his colleagues in every branch of medicine who know more in their particular practice than he. (Excepting always the soul to soul relationship of a family physician and his patient.) It is the duty and the privilege of the general practitioner to seek the advice and help of the specialist in every doubtful case possible. I consider it almost criminal for a physician to continue treating a serious illness alone if he knows another who could possibly aid him if called into consultation. In addition to the direct benefit to the particular patient every such consultation can be a source of knowledge to the physician calling on a specialist for help.

However, the consultant is often at a disadvantage. He may have never seen the patient before, while the family doctor may have studied his patient over a long period of time. The family physician needs sufficient courage to stand up for his convictions until proved wrong.

On the other hand, the family physician should not ask those financially unable to pay for a consultation with an expensive specialist, to undertake such obligations if he believes himself capable of treating the patient, even if such treatment should come under the heading of a specialty.

The one great need of the general practitioner is to keep in touch with some hospital, to attend every medical society meeting possible, to grasp every opportunity to listen to special lectures, and to never cease to be a student.

Any system of state medicine, so-called, as adopted by some foreign countries and as advocated by some here, that disturbs the relationship between the family doctor and the patient discourages the very heart and soul of many who practice medicine as the devout practice religion (in the belief that the people who are best served are those who have a family physician and allow him to guide them along the ways to health) on all of which I base my claim that the most necessary branch of the medical profession is that of a general practitioner or the so-called family doctor.

MEDICAL PROGRESS

PROGRESS IN PSYCHIATRY FOR 1933

BY KARL M. BOWMAN, M.D.*

ONE of the most important events in the field of psychiatry during the past year was the Annual Meeting of the American Psychiatric Association which was held in Boston from May 29th to June 2nd. Dr. James V. May, Commissioner of the Department of Mental Diseases, was president of the Association and presided at the meeting.

A new constitution was adopted by the Association which indicated some slight changes in attitude. Formerly membership had been encouraged and any physician interested in psychiatry was welcomed to membership. The new constitution allows for associate members who "shall be physicians who have had at least one year's practice in a mental hospital"; members "who have specialized in the practice of psychiatry for at least three years"; and fellows "who have specialized in the practice of psychiatry for at least six years".

It was felt that the Association should establish certain standards and certify individuals as qualified psychiatrists. An examining board of five fellows was appointed to pass on all applications for membership, and in addition the Association contemplates the issuing of a certificate or diploma which will be kept sufficiently difficult to obtain, to cause its possession to be regarded as of considerable value. The plans for the issuing of such certificate or diploma have not been fully worked out as yet. Back of this decision by the Association is the feeling that many persons have posed as psychiatrists who have had very inadequate training, and it was felt that either the American Psychiatric Association must come forth with definite standards or other medical organizations would take upon themselves such a function. It is quite possible that this issuing of the diploma or certificate will be carried out in coöperation with other organizations, as for example, the American Medical Association.

Of equal interest was the Conference on Psychiatric Education which was held for two days preceding the meeting of the American Psychiatric Association under the auspices of the National Committee for Mental Hygiene. This conference was presided over by Dr. C. Macfie Campbell, Professor of Psychiatry at the Harvard Medical School, and some twenty-eight psychiatrists, most of them professors of psychiatry in medical schools, attended. This conference discussed the undergraduate and graduate teaching of psychiatry. It was the feeling of this group that definite standards for higher qualifications in psychiatry should be worked out, and the idea of awarding a diploma in psychiatry was endorsed. It was felt that candidates for such a diploma should have had at least one year's internship in an accredited general hospital, three years' study in or under the auspices of an accredited mental hospital, and three years' additional experience as a minimum requirement for examination for a diploma.

The teaching of psychiatry in the undergraduate courses in medical schools was discussed and various members gave their views as to the best method of teaching psychiatry. It was agreed that the psychological and psychiatric viewpoint of human behavior at all age levels should be introduced in the pre-clinical years in the medical school curriculum, and that clinical psychiatry should be further developed in many of our medical schools.

Of interest along the same line is a pamphlet of some fifty-eight pages entitled "Psychiatry in Medical Education" by Ralph A. Noble, M.D. published by the National Committee for Mental Hygiene. This pamphlet summarizes the findings of Dr. Noble after spending two years studying the teaching of psychiatry in this country. There is a careful description given of the method of teaching employed at nine of the leading medical schools of the country.

A further article dealing with this same topic is entitled "Preparation for Psychiatry" by Adolf Meyer in the *Archives of Neurology and Psychiatry* 30: 1111, 1933. Meyer insists that the domain of psychiatry is the study and treatment of all abnormal conditions involving man's behavior. He gives in considerable detail the method of instruction which he regards as most desirable and details some of his own formulations of psychiatric conceptions.

In the field of forensic psychiatry we find constant emphasis on the difficulties of reconciling the medical and legal points of view with some suggestions as to improving general conditions. One article of particular interest is entitled "Psychiatry and the Courts" by Manfred S. Guttmacher appearing in the *American Journal of Orthopsychiatry* for April, 1933. Dr. Guttmacher, after two years' experience as psychiatrist for the Supreme Court of Maryland, discusses many of the difficulties. He feels that psychiatry deals with personalities while the law deals with generalizations. Although many

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believe that the psychiatrist tends to favor the prisoner, Guttmacher insists that some cases have received more severe sentences because of his report to the court. He upholds the principle of treating the criminal rather than the crime and advises indeterminate sentences. He quotes Justice Cardozo who in 1928 stated: "Everyone concedes that the present definition of insanity has little relation to the truth of mental life." He pays tribute to the Briggs Law of Massachusetts which has had such a beneficial effect in doing away to a very large extent with the battle of experts. Guttmacher details the results of his examinations and gives further recommendations for dealing with medico-legal problems.

There has been further interest stirred up in the whole problem of prevention of mental and nervous disease and defect by various eugenic programs, including sterilization and birth control. It is obvious that until there is a more general agreement as to the hereditary nature of many of these conditions it will be impossible to formulate a satisfactory program for prevention. An article by A. Lewis in the *Eugenics Review*, 25:79, 1933, entitled "Inheritance of Mental Disorders" claims that the manic-depressive psychoses are highly transmittable, that if one parent has the disorder one-third of the children will inherit it; whereas if both parents have the disorder two-thirds of the children will be affected, and the remaining third will be somewhat unstable emotionally. Schizophrenia is considered to be less due to hereditary factors. However, the author claims that if one parent has the disorder approximately ten per cent of the children will inherit it and forty per cent will show a schizoid type of personality, so that only half the children will be normal mentally. If both parents have schizophrenia half the children will inherit the disease and only one-fifth will be normal. Lewis does not believe that compulsory sterilization is a solution to the problem of mental disease, claiming that many apparently healthy persons will transmit the tendency, so that it is not possible to select properly those who might transmit mental disease.

The German literature, in particular, has a number of articles on this problem. With the compulsory sterilization program adopted by the German government it is obvious that there should be such discussion. Most of these articles advocate sterilization and some even recommend castration, one author advising castration of all violently insane persons with the idea that it will have a calming effect upon them. Apparently the courts in Germany have had a very conservative attitude on the subject of sterilization, and a physician performing vasectomy even with the patient's consent might be threatened with from two to ten years in the penitentiary. There is considerable reference to the laws concerning sterilization in the United States and particularly to the practice as carried out in the State of California. On the whole it would seem that the idea of eugenic sterilization particularly for the prevention of mental disease and mental defect is being more generally approved.

There have been a number of articles relating psychiatry to the work of the general practitioner. As an example might be cited Gordon Berry's article, "The Psychiatry of Progressive Deafness" in the *Journal of the American Medical Association* for November 18, 1933, in which he points out the various difficulties of the deaf person. In the young child there is often a tendency to withdraw, to become self-centered and sensitive, and to be misjudged by parents, teachers and comrades. Many persons refuse to face the fact that they are deaf, which leads to further difficulties. An attitude of suspiciousness is easily developed under such conditions and the child tends to blame others. The author details some of the best ways of dealing with these situations. He mentions the value of certain new devices for increasing hearing, the importance of learning lip-reading and the necessity of continuing social contacts. With regard to vocational adjustment he feels that there are some types of work in which deafness is an asset rather than a liability.

The problem of alcohol and drug addiction has received considerable attention. Little new material has appeared on this subject. In general there is the continued tendency to emphasize the importance of personality study in those who use alcohol and drugs and to feel that some sort of psychological analysis is necessary in the cure of these cases. The psychoanalytic group continues to emphasize the homosexual factor as one important cause of alcoholism. In general, the attitude is that alcoholism and drug addiction are symptoms of a maladjusted personality. There is further literature on the use of insulin in the treatment of morphine addiction. Apparently this method of treatment is advocated by some writers, whereas others see little of value in it.

There have been some rather interesting articles on suicide. The article by Frederick C. Lendrom in the *American Journal of Psychiatry*, 8:479, 1928-1929 entitled *"One Thousand Cases of Attempted Suicide Admitted to the City of Detroit Receiving Hospital"* points out that seventy-two of these cases resulted in death. Apparently suicide is attempted more often by females but with greater success by males. The greatest incidence is between the ages of twenty and thirty. Suicide is attempted much more frequently by Protestants than by Catholics. Unemployment is apparently a factor. Suicide is

most commonly attempted in the evening and at the week-end, especially Sunday or Monday. Poisoning was the most common means attempted, and tincture of iodine was the drug most commonly used.

Of considerable interest is an article by Leo Kanner in the *American Journal of Psychiatry*, 8:171, 1933, entitled "The Significance of the Complaint Factor in Child Psychiatry." Kanner points out that to write down the abbreviated complaint in the record often is to miss the essence of the case. The apparently irrelevant remarks by the parent in connection with the problem often give the clue to the whole situation. This article merits reading by all physicians, but particularly by the pediatricians.

No important new theories concerning mental disease have come out during the past year. Bancroft's theory of colloidal dispersion and the use of sodium rhodanate and sodium amytal has attracted very little attention, and the articles published all indicate that this theory seems inadequate to explain the mental disorders. In the treatment of mental diseases we find that there is continued interest in the use of carbon dioxide and sodium amytal. It seems to be generally agreed that temporary improvement may follow the use of these two methods but that no permanent cure will be achieved. The articles discussing the removal of foci of infection and the use of endocrines are largely repetitions of material which has already been published. Further studies into the nature of the schizophrenic process indicate that there may be certain physiological variations occurring with this disease but so far nothing has been discovered which gives any clue as to the etiology.

The treatment of neurosyphilis by fever therapy and arsenic is now considered a reasonably satisfactory method. It appears that the best results are obtained by the use of malaria and tryparsamide. Rat-bite fever and diathermy are less satisfactory than malaria, although they may be preferred for certain selected cases. There has also been considerable use of quite simple methods of causing fever such as hot baths, injection of foreign proteins and the electric blanket. By the use of malaria and tryparsamide a fair percentage of cures is being obtained by various groups so that it seems fair to expect that approximately one-third of the cases treated by this method will recover to a sufficient degree that they can go out into the community and become self-supporting. When one realizes the pessimistic attitude of twenty years ago or even later, it will be seen what marked advance has taken place in the treatment of this disorder.

The psychoanalytic group have continued to publish a great deal of material, but there have been no really new variations in the psychoanalytic theories. Of considerable interest is an article by Leo Kessel and Harold T. Hynan in the *Journal of the American Medical Association*, November 18, 1933, entitled "The Value of Psychoanalysis as a Therapeutic Procedure." In this article thirty-three cases treated by psychoanalysis are studied. In approximately half of these cases no benefit was obtained, and the authors conclude that persons suffering from a definite psychosis or persons over forty years of age are not likely to benefit by this method of treatment. Slightly more than half of the total number of cases treated were benefited. In five cases, or fifteen per cent, it was felt that the patient was definitely cured by psychoanalysis. In the remaining fifteen cases it was felt difficult to decide how much the improvement was due to psychoanalysis and how much to other factors.

A TRUST FUND FOR THE HEBREW UNIVERSITY

A trust fund of approximately $200,000 (£39,000) has been created by anonymous donors to be used over a period of ten years for the establishment and maintenance of a department at the Hebrew University for research into the causes and cure of cancer, according to an announcement made by Dr. Judah L. Magnes, Chancellor of the Hebrew University in Jerusalem, at the conclusion Sunday, May 13, of a series of conferences with the American members of the Board of Governors of the University. Dr. Magnes announced that it is the intention of the University to use part of the available funds for the erection and adequate equipment of special laboratories at the University.

The plan worked out by the Hebrew University provides for research in radio-biology, physiological chemistry and the study of cells and tissues.

"The University proposes to begin its work in cancer research in those fields in which the material at hand is sufficient to place the laboratories on a level with similar scientific institutions in Europe and America," said Dr. Magnes.

The study of the cell and that of physiological chemistry have become indispensable for the investigation of the nature of carcinoma and its manifestations in the diseased organism, according to a statement by Professor Ludwig Halberstaedter, internationally recognized as an expert in the treatment of malignant tumors, who is now in charge of the station for cancer therapy at the Rothschild Hadassah Hospital in Jerusalem. He brought with him to Palestine a supply of radium amounting to about two hundred milligrams. Dr. Georg Goldhaber of Berlin has already been appointed to assist Professor Halberstaedter in his researches. Dr. Goldhaber is attached to the University's Institute of Physics.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 20211

The following case is the third in the group of which the first two cases were published last week.

PRESENTATION OF CASE

A fifty-three year old Canadian pattern maker entered complaining of abdominal pain and constipation of three weeks' duration.

Three weeks before admission he began to notice indigestion. This was characterized by a sensation of heaviness and discomfort in the epigastrium. Associated with this was mild constipation. After he had taken some pills given by a physician the attack cleared up. There had been no nausea, vomiting, or severe abdominal pain with this attack. One week later he experienced severe abdominal cramps radiating across his abdomen from his umbilicus to the small of his back. The pain came on slowly, was persistent, but varied in severity. He had several severe attacks every day until admission. During the two weeks before admission he ate very little. His bowels moved practically every day, although the movements were small. Two days before admission he took an enema, which was followed for the next two days by more severe cramps than he had had before. The day before admission he vomited. He had no distention, jaundice or tarry stools. There had been no exposure to lead.

His general health had been very good. He had an appendectomy sixteen years before admission. The following year he had pneumonia.

His family and marital histories are noncontributory.

Physical examination showed an undernourished man lying quietly in bed in no discomfort. Both supra- and infraclavicular fossae were very prominent. Examination of the chest showed a circumscribed area of impaired resonance on the right posteriorly from the fifth to the ninth vertebral spines. There was slightly diminished vocal resonance in this same area. There were no râles. The abdomen was moderately distended, voluntarily spastic, but not tender. Peristalsis was hyperactive. There were no masses. Rectal examination was negative.

Examination of the urine was negative. The blood showed a red cell count of 5,500,000, 80 per cent hemoglobin, and a white cell count of 11,300, with 89 per cent polymorphonuclears. The stools were of liquid consistency, contained much mucus and starch, and were guaiac-negative. The non-protein nitrogen was 27 milligrams. The chlorides were 599 milligrams.

X-ray examination showed that the diaphragm, the costophrenic angles and the lung fields were clear. A gastro-intestinal series showed some spasm in the prepyloric area. The duodenal cap showed a slight irregularity which was not definite enough to warrant a positive diagnosis of ulcer, but was quite suggestive. The six-hour examination showed no gastric residue. A barium enema was negative.

Three days after admission operation was done. Following it the patient had mild abdominal pain. There was no vomiting or coughing. He died two days later.

X-RAY INTERPRETATION

DR. GEORGE W. HOLMES: The films taken of this patient's chest show a condition which we often see and about which we never feel quite certain. Notice the extremely small heart shadow. I do not know whether this is due to rotation of the heart so that we are looking at it in the transverse position or whether these patients actually have small hearts. It is a problem of some interest. The lung fields are very large and appear as though he had a moderate degree of emphysema.

In regard to the films of the stomach, I cannot add anything to what has already been said.

FURTHER HISTORY

The preoperative diagnosis was partial intestinal obstruction. An exploratory laparotomy was performed. A right paramedian incision was made between the old scar and the midline. There were no adhesions to the under surface of the previous scar, but a loop of ileum was angulated and stuck to the posterior wall of the abdomen to an extent which seemed sufficient to produce an obstruction. This was freed. The colon was palpated through its entire extent. Lumps of barium were present from the splenic flexure downward, but none proximal to it. The stomach was palpated and visualized, and so far as could be determined was negative. The esophageal opening in the diaphragm was palpated, but nothing abnormal was noted. There were adhesions from the gall bladder to the duodenum, but the gall bladder felt soft and flexible and contained no stones so far as could be told. One small adhesion was cut. The appendix stump could be seen and was not adherent. The right inguinal ring was palpated; no evidence of a sac could be felt. The ileum was searched for a Meckel's diverticulum, but none was found. The abdomen was sutured without drainage.

Differential Diagnosis

Dr. Edward L. Young, Jr.: "Three strikes and out." Two strikes so far, and as I read this case history I can't quite see a home run. I expected not to know what was found at operation, but I do not see that having it I am much farther along.

The duration of symptoms, the fact of a previous operation with the possibility of adhesions and the type of symptoms which he is having all point toward a subacute intestinal obstruction. On the other hand, we are not told that pain is precipitated by the intake of food, which is apt to be true of the partial obstructions. Moreover, except on one occasion, he did not have nausea, which is generally present in partial obstruction. The other causes of abdominal pain were apparently considered and ruled out so far as possible. They mention in particular the study of lead colic and the study of the cardiac condition. There is no evidence of a small epigastric hernia which may be present, difficult to recognize, and which gives pains similar to these. The intermittent character of the symptoms suggests a chronic intussusception which, though rare, does occur, but here again there should be some evidence of it either in a positive guaiac or intermittent nausea or a palpable mass. I do not see any indication in the story to point toward any other lesion such as, for instance, duodenal or gastric ulcer; gastric cancer would seem to be ruled out by the short story, by a good hemoglobin and red cell count. So that it seems to me to come down to the question whether the patient has enough symptoms to justify operation. This was apparently so, and it seems to me that the preoperative diagnosis will have to be probable subacute intestinal obstruction, but a careful exploration must be done if, as I expect, a definite obstructive point is not found.

As regards his death, I see nothing here to tell us why. So far as they give us any evidence of any other system of organs, they are normal; the non-protein nitrogen is where it should be, and nothing else is given us that is out of line. I must confess that I cannot make an absolute diagnosis. I apparently have followed very much the same line of reasoning that went on in the minds of those in charge of the case. It seems to me that the only way to handle it was an exploration. The only justification for making a diagnosis of mesenteric thrombosis is the bad company that we are in, as the other two cases had it. From the description and the operation I cannot quite tell whether what they found would justify a very optimistic opinion as to the causative relation of what they found to the symptoms. It is too often true that "the wish is father of the thought". Logically and on the theory of chances, this patient had a cause of subacute intestinal obstruction which was searched for but not found. He died as a result of one of the terminal accidents, an atypical embolus or peritonitis or possibly a mesenteric thrombosis.

Clinical Diagnoses

Subacute intestinal obstruction.
Generalized peritonitis.

Anatomic Diagnoses

Pylethrombosis with extension to the major divisions of the portal system, including the splenic division.
Gangrene of the small bowel.
Infarcts of the liver and total infarction of the spleen.
Generalized peritonitis.
Mural thrombus of the abdominal aorta, celiac axis orifice.
Operative wound, freeing of adhesions in the right iliac fossa.
Purulent periarditis.
Arteriosclerosis, slight aortic and coronary.
Chronic pleuritis, bilateral.

Pathologic Discussion

Dr. Tracy B. Mallory: This patient also died of mesenteric thrombosis. In contrast to the first two cases—you remember each of those had a very fulminating onset with a rapid appearance of prostration and shock—this man had over two weeks of symptoms of a relatively mild character. I believe one almost always thinks of mesenteric thrombosis in terms of fulminating disease and overlooks the possibility of the slowly developing case. In this case the portal vein and the splenic vein contained old grayish-white thrombi which must have been present for a matter of two or three weeks at least. He had had them long enough so that he was beginning to develop a compensatory circulation between the spleen and the gastric plexus. There were large veins running from the hilus of the spleen to the greater curvature of the stomach; if he had survived a few weeks or months longer he would have had well developed esophageal varices, and might eventually have died from the rupture of one of them. The collateral circulation, however, had failed to develop rapidly enough to prevent total infarction of the spleen. The thrombi also extended well up into the portal branches in the liver, and there were multiple infarcts of the liver, which is a relatively uncommon lesion.

In all three of these cases I think it almost impossible to make a diagnosis from the history. The one person who could have made the diagnosis was the operating surgeon. It seems to me that a more careful exploration of the abdomen might have established the diagnosis in each of these cases. I do not know how great

the change in appearance was between the time of operation and the time of autopsy. Undoubtedly the frank gangrene we found postmortem was not present at the time of operation, but I think that the swollen cords of the veins could have been felt in two cases and the absent pulsation in the artery in the third case, if the patients were in good enough condition to permit of reasonably thorough examination, which may not have been the case.

DR. YOUNG: Was there any fluid reported in any of these cases, particularly this last one?

DR. MALLORY: It was present at the time of autopsy, but not at operation.

DR. YOUNG: Because it should have been in the abdomen at the time of operation. Was it, Dr. Boyden?

DR. A. M. BOYDEN: No.

DR. HOLMES: Was there any change in the heart?

DR. MALLORY: The heart was a small one, Dr. Holmes. It weighed 275 grams, which would be normal for a woman, but is definitely small for a man of fifty.

A SURGEON: You do not recall how much free fluid there was in the abdomen in this last case, do you?

DR. MALLORY: About a liter and a half; hardly enough to pick up clinically.

DR. HOLMES: During the acute attack would not the small bowel be paralyzed?

DR. MALLORY: The actual area of involvement almost certainly would have been. The segment above might well be spastic, however.

DR. HOLMES: It seems to me if we had taken a plain film of the abdomen when the patient was acutely ill we might have shown the presence of gas and the absence of normal peristaltic formation in the small bowel and perhaps have made the diagnosis.

A PHYSICIAN: Do we know what the white cell counts were?

DR. MALLORY: In general low; in the last case 11,000. In the first case it was 12,000 and in the other case about 17,000.

CASE 20212

PRESENTATION OF CASE

A thirty-four year old single white American was brought into the Emergency Ward in coma.

The day before entry his companion noted that the patient's speech suddenly became very thick and that he had a peculiar look on his face. He made him sit down and called for help. By this time the patient was unconscious and it was noted that his left side was stiff and motionless. He was taken home and put to bed. There he responded to questions, and it was noted that the left side of his face was paralyzed. He lapsed into a semistuporous state, in which he remained.

He had always been strong and healthy. Fourteen years before entry he passed a kidney stone. One month before entry he complained of dizziness and remarked that he probably needed glasses.

Physical examination showed a well nourished, plethoric young man in coma and incontinent. The pupils were small and reacted to light. The fundi were slightly choked and showed marked nicking of the veins. The heart was not enlarged. There were no murmurs. The blood pressure was 190/100. The left side was motionless. The reflexes were greater on the left than on the right, but were hyperactive on both sides. There was left patellar and ankle clonus and a bilateral Babinski.

The temperature was 102°, the pulse 120. The respirations were 28.

Examination of the urine was negative. No examination of the blood was done.

Lumbar puncture performed at half-past five p.m. on the day of admission showed an initial pressure of 400. The fluid was grossly bloody. After withdrawal of 50 cubic centimeters the pressure went down to 180. The fluid showed a negative Wassermann, total protein 348, colloidal gold 3445555554, sugar 58.7, chlorides 743. Another lumbar puncture was performed at eight p.m. that same day. The fluid was also grossly bloody. The initial pressure was 250, falling to 150 after withdrawal of 10 cubic centimeters. Two more lumbar punctures, one performed at midnight and another the following day, both gave grossly bloody fluid under a pressure of 350.

DIFFERENTIAL DIAGNOSIS

DR. HENRY R. VIETS: The striking thing about this case is the fact that a young man of thirty-four, previously entirely well except for a kidney stone, suddenly became semistuporous and ultimately went into coma. At the same time there were signs indicating a hemiplegia on the left side. Naturally, in view of this onset, one thinks of an intracranial vascular accident. The suddenness of onset might lead one to think of embolus did we not know about the spinal fluid, which showed gross blood and thus was distinctly unfavorable to that diagnosis.

The patient may have had a brain tumor with a hemorrhage into it. He had, however, no signs of increased intracranial pressure and there was nothing in the previous history to suggest tumor of the brain. We know, moreover, that hemorrhage into brain tumors, giving what appears to be a sudden onset, is not nearly so common as it was previously considered to be.

The history, therefore, of this young man speaks very strongly for a vascular lesion. It might be due to a ruptured vessel from an an-

eurysm, arteriosclerosis, or vascular lues. The possibilities of all three must be considered.

We did not know until the examination took place whether the man had lues or not. The negative findings in the spinal fluid and the negative blood Hinton were strong evidence against it and I do not believe we can consider his condition on that basis.

The examination gives some evidence of arteriosclerosis, especially the examination of the fundi. There was definite nicking of the veins when the arteries passed over them, a condition not usually seen in a man as young as this. The patient also had a hypertension; at one time the blood pressure was 190/100 and at another the systolic pressure was 180. In spite of these two findings it does not seem to me likely that we are dealing with a case of ordinary rupture of an arteriosclerotic vessel. This opinion is largely based upon the age of the patient, although such a diagnosis could not be ruled out entirely from the history alone.

Rupture of an aneurysm is a much more common finding, and the history of the sudden onset in this man seems to be entirely consistent with this diagnosis. The gross blood in the spinal fluid on repeated examination and the fact that he survived only a short time are also consistent with the diagnosis. The hemiplegia might easily be due to an aneurysm if the defect in the vessel happened to lie in a place that would allow blood to spread over the cortex of the brain on the right side. There is a possibility, however, that a lesion deeper in the brain, which would also give hemiplegia, will be the underlying pathologic finding. We do not have a history of progressive hemiplegia and therefore the site of the lesion in or near the internal capsule, giving a complete hemiplegia suddenly, is most likely. On the other hand we have to account for the gross blood in the cerebrospinal fluid, which can only be found when the lesion is in or near the subarachnoid space. I should think, therefore, from the history and from the examination one would strongly suspect a ruptured aneurysm on the right side of the brain, giving the sign of left hemiplegia, or possibly a subcortical hemorrhage, perhaps due to aneurysm, giving much the same picture. This syndrome, if I am correct about the aneurysm part of it, has not been uncommon.

Further History

Dr. W. Jason Mixter: The day following admission a subtemporal decompression was performed. A two and a half inch vertical incision was made in front of the right ear. Fibers of the temporal muscle were split and a moderate sized subtemporal decompression was done. The brain bulged strongly into the wound and no blood clot could be seen. The inferior horn was tapped in the temporal lobe and slightly bloody spinal fluid withdrawn. That fluid was much less bloody than the fluid obtained by lumbar puncture previously. This did not seem to bring down the pressure very much. The posterior portion of the frontal lobe was then explored with the ventricular needle and a large amount of old fluid blood was evacuated. As I remember it, this was about three centimeters deep at the upper part of the subtemporal decompression. This brought the pressure down somewhere near normal. The needle was withdrawn, the tract was somewhat dilated and a small rubber drain was placed to the hemorrhagic cavity. The wound was closed in layers with silk.

The brain was placed in the cavity on account of the fact that there still seemed to be some blood oozing from the cavity and it seemed wiser to do that in order to prevent reaccumulation. The operation lasted approximately fifty minutes.

The preliminary diagnosis was spontaneous intracranial hemorrhage. The postoperative diagnosis was intracerebral hemorrhage with right subtemporal decompression and evacuation of clot.

That evening a lumbar puncture showed xanthochromic fluid. He was given intravenous glucose, but rapidly failed, did not regain consciousness and died.

Further Discussion

Dr. James B. Ayer: I want to say that if this is intracerebral hemorrhage, it has not been usual to find aneurysm as the cause. The hemorrhages from aneurysms are usually at the base of the circle of Willis, which would indicate that we had a communication with the ventricles here. I do not think that we have as yet any reason to say we have any pathology back of it. One would think more of hypertension than of anything else, even though it be a young man. Trauma will do that sort of thing, give a perfectly typical history like this, and although we have no history of trauma, he may have had a trauma that has not been recognized and has given no outward evidence.

Dr. Mixter: We had a pretty good history, and I do not believe there was any trauma. The blood seemed to be directly in the subcortical brain substance, very possibly near the ventricle, and definitely not in the subarachnoid space.

Dr. Tracy B. Mallory: Under what conditions would you operate on a case of cerebral hemorrhage?

Dr. Mixter: The reasons for operating in this case were to my mind about as follows. In the first place here was a man getting rapidly worse, whose pressure and symptoms were not controlled by lumbar puncture, with a definite localization to the right side. We did not know whether we were dealing with a subarachnoid hemorrhage, a subdural hemorrhage or a subcortical hemorrhage. I think that operation, craniotomy and exploration, under these cir-

cumstances are perfectly proper. I think the expectation of getting very much relief from evacuation of subcortical clot is not so good as when we have fluid blood on the surface. At the same time I see no reason why a subcortical clot which is causing marked compression might not be so operated upon with relief of symptoms. I should say, although I am not sure, that this lesion was probably in the neighborhood of the anterior cerebral artery or one of its branches.

DR. MALLORY: One of the interesting points in this case, of course, is the blood pressure. It is known that an elevation of cerebrospinal pressure can produce an elevation of blood pressure, but not so definite a hypertension as this. Do you know the figures, Dr. Ayer?

DR. AYER: No; but you are perfectly correct.

DR. MIXTER: Another point is that the hypertension of increased intracranial pressure is increased in systole without much in diastole. This man had a diastolic of 100.

DR. MAURICE FREMONT-SMITH: How much emphasis can be put on the absence of headache in a man who has a pretty good history and in whom you are trying to rule out the presence of subarachnoid hemorrhage?

DR. MIXTER: I do not know. This came on rather suddenly. He went into coma pretty rapidly.

CLINICAL DIAGNOSIS

Subarachnoid hemorrhage.

ANATOMIC DIAGNOSES

Cerebral hemorrhage.
Cerebral arteriosclerosis.
Multiple cerebral infarcts.
Operative wound, subtemporal decompression, right.

PATHOLOGIC DISCUSSION

DR. MALLORY: Our autopsy was limited to the head, and Dr. Kubik will tell us about that.

DR. CHARLES S. KUBIK: There is a hemorrhage which involves a large part of the right frontal and parietal lobes and has broken through into the lateral ventricle. It probably comes from one of the lenticulostriate arteries which may be seen entering the cavity resulting from the hemorrhage. The main cerebral arteries are thickened so that they do not collapse and there is some, but not very extensive, atheromatous degeneration.

Microscopic sections reveal sclerosis not only of the main arteries and of the lenticulostriate and other small arteries within the substance of the brain but of the arterioles as well. There is further evidence of vascular disease in the form of tiny foci of degeneration in the cerebral cortex, the subcortical white matter and in the cerebellum.

DR. MALLORY: I think with the anatomic findings, in spite of the fact that we were limited to the brain, that we are pretty safe in assuming that the underlying disease here was hypertension with marked arteriosclerosis and arteriolar sclerosis.

Dr. Mixter has just said that for at least five years previous to this acute episode the patient had not had a physical examination or a blood pressure reading, so we do not know how long he had had hypertension; very possibly for a considerable period.

DR. VIETS: May I say just one word? It is possible, now that we know the pathologic diagnosis, that we should have paid a good deal more attention to the nicking of the vessels in the fundus in this young man. One would have expected to find, however, more signs of generalized arteriosclerosis than would be indicated by this single examination. The vessels of the retina often give a very good picture of the vessels of the cerebrum, and that finding alone should have led us to suspect arteriosclerosis, and to have given more weight to that diagnosis.

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The Massachusetts Medical Society

THE SCIENTIFIC EXHIBITS OF THE ANNUAL MEETING

THE Scientific Exhibits of the Massachusetts Medical Society have always been a valuable part of the Annual Meetings, and in recent years they have been attracting a steadily increasing amount of interest. This is not strange when we realize that each exhibit offers in graphic form the concentrated results of months and years of someone's intensive work.

It requires no great gift of imagination, while standing before such an exhibit, to see the various specimens and charts dissolve, like something in a movie fadeout, and in their place to picture our colleagues in laboratories, operating-rooms and hospital wards, gradually collecting the bits of information which, pieced together, will make tomorrow's knowledge of disease. After this vision we stand appalled by the mass of effort that can be crowded into one small booth.

The advanced program already published* gives promise of an unusually valuable collection of exhibits for the June meeting in Worcester. Some of them will later be shown at the Century of Progress in Chicago. They will all contain information which we as members of the medical profession cannot afford to pass by. The Society owes a great debt of gratitude to the exhibitors, not only for their scientific accomplishments, but also for their willingness to lay before us the results of their labors.

*New Eng. J. Med. 210:1043, (May 17) 1934.

THE TYPHOID FEVER EPIDEMIC IN MAINE

FOR several years the opinion has been growing that typhoid fever no longer exists as a major menace to human life. Unfortunately our careless typhoid carrier may be the cause of a serious epidemic.

This was well shown in a report to this *Journal* by Dr. G. A. Coombs of 283 Water St., Augusta, Maine, who in addition to a large surgical practice is a part-time health officer. The report in the daily papers that the first case of typhoid fever in Augusta, Maine, was made ill by drinking water from the Kennebec river has not been proved, although suspected.

A brief report of the epidemic referred to is that the first case discovered was a boy who had been ill for about ten days before he was attended by a physician. The father of this boy took care of him and helped in the milking of cows on the dairy-farm. The milk was found to be distributed to thirty-seven families and two grocery stores, all being in the French section of the city.

Because of the likelihood of many infected persons, free anti-typhoid inoculations were provided for the whole city. In order to carry out this plan, nurses and a physician were provided by the State and during fifteen days more than 7,000 people were given anti-typhoid treatment at the free clinics. The physicians of the city gave the treatment to many private patients so that more than 8,500 persons were so treated. In addition all food handlers in the city, including milk dealers, were given physical examinations and specimens of urine and feces of all such were examined in order to check possible typhoid carriers.

About 65 cases with five deaths was the record of the epidemic. Seven of the cases and two of the deaths were in the family of the milkman where the original case occurred. Up to April 28 no new cases were reported. The health authorities were aided by the Augusta General Hospital where accommodations were provided for dealing with the patients.

Here is a brief recital of an epidemic of typhoid fever with its source recognized as promptly as possible under the circumstances, and fought efficiently. Of the way it was handled there seems to be no ground for criticism, but may not this episode be a strong argument for compulsory pasteurization of milk which may at any time be a serious menace to health if used in its raw state?

AN APPEAL FOR A SECTION OF DERMATOLOGY AND SYPHILOLOGY

On page 1136 there appears an appeal for the formation of a Section of Dermatology and Syphilology of the Massachusetts Medical Society.

Section 5 of Chapter IV of the By-Laws of the Society provides that, "The Council may vote to establish Sections for the consideration of scientific papers at the annual meetings of the Society, and shall appoint the first chairman and secretary of a new Section so established."

This appeal which is signed by ten Fellows of the Society, if presented at the Council meeting, merits consideration.

Intimation that the State Department of Public Health is also favorably disposed to the creation of this Section, lends weight to the movement.

Even though there have been expressed opinions favorable to curtailing the section activities in favor of general meetings, thereby eliminating competition regarding the conflicting time of different sections, this letter signed by prominent dermatologists must be given due consideration.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Cotton, Frederic Jay. A.B., A.M., M.D. Harvard University Medical School 1894. F.A.C.S. Consulting Surgeon, Boston City Hospital, Faulkner Hospital, Newton Hospital, New England Hospital for Women and Children, Chelsea Memorial Hospital, and Cape Cod Hospital, Hyannis. His subject is "Notes on Giant-Cell Tumors of Bone and Cysts." Page 1095. Address: 520 Commonwealth Avenue, Boston, Massachusetts.

Taylor, Grantley W. A.B., M.D. Harvard University Medical School 1922. F.A.C.S. Assistant Surgeon to Out-Patients, Massachusetts General Hospital. Surgeon to Out-Patients, Collis P. Huntington Memorial Hospital, Boston. Assistant Surgeon, Pondville Hospital, Norfolk. His subject is "Cancer of the Mouth in Women." Page 1102. Address: 264 Beacon Street, Boston, Massachusetts.

Wilkinson, S. Allen. A.B., M.D. University of Pennsylvania School of Medicine 1925. Department of Gastro-Enterology, Lahey Clinic. His subject is "Diaphragmatic Hernia." Page 1105. Address: 605 Commonwealth Avenue, Boston, Massachusetts.

Nissen, H. Archibald. A.B., M.D. Harvard University Medical School 1916. Assistant Physician, Robert B. Brigham Hospital. Member of Staff and Visiting Physician, New England Deaconess Hospital. Assistant Physician, Palmer Memorial Hospital. Former Instructor in Medicine, Harvard Medical School. His subject is "Chronic Arthritis and Its Treatment." Page 1109. Address: 205 Beacon Street, Boston, Massachusetts.

Brailey, Allen G. B.S., M.D. Harvard University Medical School 1928. Assistant in Medicine, Harvard Medical School. His subject is "The Treatment of Constipation." Page 1116. Address: 270 Commonwealth Avenue, Boston, Massachusetts.

Bousfield, Cyril E. M.D. Medical Director, American Baptist Mission Hospital. His subject is "Notes on the Treatment of Leprosy." Page 1118. Address: Chaoyang General Hospital, American Baptist Mission, Chaoyang, via Swatow, China.

Moser, Oran A. M.D. Yale University School of Medicine 1902. Health Officer, Rocky Hill. Medical Examiner, Hartford County. President, Hartford County Medical Association, 1933-1934. His subject is "The Family Doctor." Page 1120. Address: Rocky Hill, Connecticut.

Bowman, Karl M. A.B., M.D. University of California Medical School 1913. Formerly: Assistant Physician, Bloomingdale Hospital; Captain Medical Corps, U. S. Army; Chief Medical Officer, Boston Psychopathic Hospital. Assistant Professor of Psychiatry, Harvard Medical School. Assistant Professor of Clinical Psychiatry, Boston University School of Medicine. Head of Department of Psychiatric Social Work, Simmons College School of Social Work. His subject is "Progress in Psychiatry." Page 1122. Address: Boston Psychopathic Hospital, 74 Fenwood Road, Boston, Massachusetts.

THE DOCTORS WELCH OF NORFOLK

BY HARVEY CUSHING

Over the river, on the hill,
Lieth a village, white and still.
All around it the forest trees
Shiver and whisper in the breeze.
Over it sailing shadows go,
Of soaring hawk and screaming crow;
And mountain grasses, low and sweet
Grow in the middle of every street.

Over the northerly part of Litchfield County in Connecticut sprawl the rugged and heavily wooded foothills of the Berkshires, and in early May they are possibly even more lovely than when the first frosts of late September have suddenly turned to crimson the swamp maples of their lower valleys. But whatever the time of year, no part of Litchfield County is more quietly satisfying than the township of Norfolk which must have changed scarcely at all since Hopestill Welch decided to settle there one hundred and sixty-two years ago.

If the beauty of the countryside is thus felt by the casual visitor, how much more deeply must those feel who, born and bred in Norfolk village, have roamed the neighboring hills, fished the streams, and swum the ponds in boyhood days. And so the great-grandson of this Hopestill Welch, though in the course of his eighty-four years he had wandered far and attained world renown, never lost his affection for the place of his birth and requested that it also be his place of burial just as it had been of his medical forbears.

Norfolk village, having been protected against the vandalism of modern days, has lost none of its old-time charm. Many of the villagers who have moved away and prospered have regularly returned to pass the summer on some of the nearby hillsides, but the village itself has changed but little. Loving hands have kept it trim and neat. The village green with its magnificent trees, its typical New England meeting-house and town hall is the same as always; and so too is the original village "buryal-yard" laid out in 1757 as God's Acre.

Behind a low stonewall just beyond the last of the houses on the road to Canaan it lies, inconspicuous to passers-by, on the lower slope of Haystack Mountain where it borders on the brook. In the shadow and solitude of great trees the headstones are scattered in groups as though they had accidentally grown there. No gravel walks, no artificial planting and regimented narrow plots have been needed here though the original acre has been considerably extended.

Whatever may have happened to the many from Norfolk who joined in the great migration to the New North-West—as did ten of Hopestill Welch's thirteen children—one gets the feeling that those who stayed behind must have lived to a great age else there would by this time be more crowding in this one hundred and sixty square perches of land. Norfolkians while not boastful have good reason to take pride in the proverbial longevity of their people which is not surpassed or equalled by any other community in New England. In the space of two years not so very long ago, six persons died there whose average age was over ninety-three. Compared to this the Welches, as we shall see, mostly died young—in their early eighties; and it was a family tradition that they would be likely to keep going in perfect health just that long and no longer.

On this particular May fourth of 1934 with the countryside glistening after a warm Spring rain, the early afternoon sun struck across the hillside lighting up the feathery pink blossoms of the maples, the delicate early green of willows and birch; and the tufted white blossoms of an occasional shadbush, set off against the dark hemlocks and the brilliant green of the Spring turf, made it clear that the season had come to cast for speckled trout.

There is a touch of sadness and melancholy about Autumn which would seem the more natural time of year for an old man to die. But so far as anyone could ever tell, sadness and melancholy were moods of which he was incapable and it was as though he whose youthful spirit and reactions so belied his years had deliberately waited for Spring—waited at least as long as he could, for the season has been delayed by the hard winter and the venerable elms have not as yet burst their winter buds.

One such giant has come almost to envelop in protecting embrace the headstone of a certain Jerusha P.——, who had been buried at its feet, evidently the wife of Captain John Porter who in 1793 came to be placed beside her. Another aged tree of the same kind once shaded the nearby knoll marked by a modest brownstone shaft where lie the Welches and where a new grave has just been dug to hold the ashes of still another of them.

A few people had gathered at the knoll—his relatives and three or four others. Appropriate verses from Ecclesiasticus were read by the local clergyman and followed by a simple prayer. Then two of his great-nephews who were at the same time his namesakes lowered the casket into its place. That was all—except for one incident.

In the small gathering was a frail little old lady whose many wrinkles could not conceal that she must once have been beautiful. She arose with some difficulty from the camp chair that had been provided for her and, refusing aid, walked over to where lay a spray of red roses she had brought and lifting them she placed them with her own hands beside the grave. Then turning away she said as to herself, "I shall now go." Only six months younger she was than this friend of her childhood; they

had long ago been playmates—perhaps, on her part, something more than that.

It was the same little old lady who four years before had been taken in a wheel chair all the way to Washington so that she might hear in Continental Hall what the President of the United States and other notables would have to say about her lifelong friend; and also what in return he would have to say for himself on that day when speeches in honor of his eightieth birthday were broadcast to all quarters of this country and abroad.

While this public celebration with its spontaneous outburst of affection was in its way a sort of canonization, honors had been heaped upon this particular Doctor Welch throughout his life. He could not avoid them without being ungracious—and this he never was—but they left him unchanged in his simplicity. He always behaved on these occasions as though he were merely representing someone else—someone else who deserved the honor and for whom it was really intended.

It had been urged that the National Cemetery at Arlington was the proper place for him to lie in view of his distinguished service during the War. He had merely volunteered on an April day in 1917 to help his friend, the Surgeon-General, open his rapidly overwhelming mail; and the close of the War found him still there—much to his surprise and somewhat to his amusement—a Brigadier-General. But a military funeral, with gun carriage, firing squad, the last post and all that, just because he had done his duty as he saw it, would have been incongruous and unsuited to his real character and life, public though much of it had come unsought to be. It was wholly consistent and typical of him that he should choose to rest where to the future passer-by he would be just another of the many Doctors Welch of Norfolk.

Even now, should you happen to ask the aged apothecary in the village which of the Doctors Welch was the more celebrated, he would certainly say William Wickham, the father of this William Henry. And should you venture to demur, knowing that William Wickham, weary of compounding his own drugs, had set him up in business some fifty and more years ago, he would be likely to reply:

"If you don't believe me, just ask any middle-aged person you may chance to meet up with for thirty miles around and see if they don't agree. Most of 'em will remember when they used to put a light in the window for him should he happen by in the dead of night. He was never known to send out any bills—pretended to forget that people owed him money and those who paid had to press it on him. There's his house just down the street—as it was when at the end of his seventy-four years he left it to his successor—a good man, too, though he could not stand the wear and tear so long as if he'd been a placid and good-humored Welch.

"It was in that house his son Willie was born and there's a tablet on it saying as much; but if you think the drinking fountain in front, for thirsty horses coming up the hill, was put there in memory of your friend rather than for William Wickham his father, you make a great mistake. If you haven't forgotten your Latin, just go and read the inscription cut around its rim.

"And you will find just off the road the little house in which *his* father, Dr. Benjamin Senior, lived until he died at eighty-two, beloved like all the rest of them. It was his second wife, Elizabeth Loveland, a beautiful woman, who lived to be eighty and was everybody's friend and known to every Sabbath-School boy in the town as 'Grandma Welch'—it was she who brought up the Dr. Welch you've just seen buried today, for his mother died when he was barely six months old.

"William Wickham wasn't the only one of old Dr. Benjamin's sons who took up medicine; there were four others who spent their lives within thirty miles of here—all men of the same kind and they are all buried together in the Acre. Asa was the eldest. He first started out in Tyringham but was invited to settle in Lee where he practised until his death. He was interested in public affairs—as indeed they all were for that matter—though he was the only one who happened to be sent to the State Senate. Benjamin Jr. was the next. He got his M.D. at Yale in 1823 and was in active practice for fifty-four years—first here for a time, then at Litchfield and finally at Salisbury. He became celebrated as a surgeon and there was a common saying hereabouts: 'Don't give up hope before you've sent for Dr. Benjamin.'

"James was the third son. He got his degree at the old Berkshire School in 1830 and settled at Winsted where he built up a large practice in which he was active till he reached eighty; and what's more at least three of *his* sons became doctors. Then came William Wickham—the best of them all to my thinking. And after him the fifth and youngest was John Hopestill, who also graduated at the Pittsfield school in 1848 and then practised in Salisbury, in Cornwall and in Norfolk till 1871 when he moved to Hartford where he finally drifted out of medicine into a manufacturing business."

So it would seem there must have been at least ten doctors in these three generations, all apparently men of very similar type, good judges of people and good public servants, men able to instill confidence and win regard, all of them blessed with a rare capacity to gain and retain friendships with young and old, all of them apparently men who were respected, admired and beloved. And then, to follow the old apothecary's advice, you go down the road and

find cut on the rim of the fountain erected in memory of your friend's father — the last of the Doctors Welch to pass his life wholly in Norfolk—what might be no less appropriate to William Henry his son:

FONS SUM SOLATI TALIS ET IPSE FUIT

MISCELLANY

CONGRATULATIONS TO DR. ELLIOTT P. JOSLIN

According to reports in daily papers, Mrs. Mabel H. McCarthy of Buffalo provided in her will for a bequest for five thousand dollars to Dr. Joslin to be used in promoting the work at his camp for the treatment of diabetic children.

THE GREATER BOSTON MEDICAL SOCIETY CHANGES ITS NAME

Under the title of the New England Association of Jewish Physicians adopted by the Greater Boston Medical Society, the old title was discarded at the Annual Meeting of this body.

The officers elected are:

President: Dr. Herrman L. Blumgart.
President-Elect: Dr. Harry C. Linenthal.
Vice-President: Dr. Henry Kontoff.
Treasurer: Dr. Max Ritvo.
Secretary: Dr. David B. Stearns.

MASSACHUSETTS DOCTORS ELECTED TO FELLOWSHIP IN THE AMERICAN COLLEGE OF PHYSICIANS

On April 16 at the meeting of the American College of Physicians, in Chicago, Drs. Horace K. Boutwell of Brookline, Felix Percy Chillingworth of Boston, and Robert Sterling Palmer were elected to fellowship.

THE FORSYTH DENTAL INFIRMARY

To a reader of the Nineteenth Annual Report of the Forsyth Dental Infirmary, interesting facts are apparent.

This institution is an important agent in promoting the hygiene of children, and occupies an important position in preventive medicine.

It is within a comparatively few years that the treatment of oral diseases and defects of the teeth have been adequately recognized as important factors in preventive and therapeutic medicine, and beyond these obvious functions of dealing with disease, scientific dentistry in the field of orthodontia has a recognized relation to the psychology of childhood because the correction of deformities promotes self-esteem and confidence in the child.

The attitude of the dental profession toward the Forsyth Infirmary is reported to be cordial, which is commendable. John Hamilton Forsyth and his brother George Henry Forsyth have made a great contribution to the well-being of children in coöperation with the George White Health Units.

AN ENDORSEMENT OF DR. TIMOTHY LEARY'S FINDINGS

At a meeting at Utica, New York, of the New York State Medical Society Dr. Harrison S. Martland, of Newark, New Jersey, Chief Medical Examiner of Essex County, said in reporting cases of sudden deaths, "As we grow older, I believe we eat too many dairy products. I agree with Dr. Timothy Leary of Boston that we eat too many foods high in cholesterol content as we pass the 40 mark. By that I mean butter, eggs, cream and other dairy foods."

MORTALITY RATES

Telegraphic returns from 86 cities, with a total population of thirty-seven millions for the week ending May 5, indicate a mortality rate of 12.0 as against a rate of 11.2 for the corresponding week of last year. The highest rate (19.8) appears for Nashville, Tenn., and the lowest (5.0) for Flint, Mich. The highest infant mortality rate (16.7) appears for El Paso, Texas, and the lowest for Fort Worth, Texas, Louisville, Ky., Miami, Fla., Tacoma, Washington, and Wilmington, Del., which reported no infant mortality.

The annual rate for 86 cities is 12.5 for the eighteen weeks of 1934, as against a rate of 12.0 for the corresponding period of the previous year.

SUMMARY OF DEATHS AND DEATH RATES (ANNUAL BASIS) FROM AUTOMOBILE ACCIDENTS PER 100,000 ESTIMATED POPULATION FOR 86 CITIES FOR CORRESPONDING PERIODS OF 1934 AND 1933.

	Week ending May 5, 1934	Week ending May 6, 1933	First 18 weeks 1934	First 18 weeks 1933
Total deaths	164	130	2,824	2,474
Death rate	22.8	18.1	21.9	19.1
Deaths due to accidents in city	131	111	2,301	2,003
Death rate	18.3	15.5	17.8	15.5

—Bureau of the Census.

A RADIO MESSAGE PREPARED AND SPONSORED BY THE COMMITTEE ON PUBLIC EDUCATION OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE DEPARTMENT OF PUBLIC HEALTH

THE RISE OF PUBLIC HEALTH CONSCIOUSNESS

BY ELEANOR J. MACDONALD, A.B.*

The evolution of the present public health movement covers a period of about three thousand years. It has advanced with the progress of civilization and comprises the ideas and accomplishments of many men of many ages. The progress in the past seventy-five years far exceeds that of the previous centuries, but the contributions of the Hebrew, Greek and Roman Periods and also of the Middle

*Statistician, Division of Adult Hygiene, Massachusetts Department of Public Health.
Station WEEI. 1:15 P.M. January 19, 1934.

Ages have formed part of the basic structure in this development.

The beginnings of public health are chronicled in the Old Testament. The Mosaic rites furnished real public health precepts. A definite code for hygiene comprising diet, sex hygiene and avoidance of unclean objects is clearly defined. Directions are given for the segregation of the sick and the use of disinfection to prevent the spread of contagious disease. These public health measures were incorporated in the fundamentals of the religion, and high priests were guardians of the body as well as of the soul.

The contribution of Greece to public health was the attempt in Sparta to develop a physically-perfect race. The humanitarian instinct of caring for the sick was not popular with them. Physical fitness was the desired end. All weak children were thrown into a cave on Mount Taygetus to die. The stronger ones were given a vigorous training in athletics and were subjected to the hardships of scanty clothing, plain food and stern discipline. The product of this training was characterized by Woodrow Wilson in "The State" as "a fine soldiery, and noble soldier's mates; shapely sturdy women and lithe laconic men".

The beginnings of sanitation were found in early Rome in the water supplies, sewerage systems and methods for nuisance prevention. According to Frontinus, Water Commissioner of the City of Rome in the first century, "From the Foundation of the city for 441 years (or until 313 B.C.) the Romans were content with the use of waters which they drew either from the Tiber, or from wells, or from springs. Springs have held, down to the present day, the name of holy things, and are objects of veneration, having the repute of healing the sick; as for example, the springs of the Prophetic Nymphs, of Apollo, and of Juturna. But there now runs into the city the Appian aqueduct."

The early sewers were for drainage purposes and did not carry human excreta. In fact, sewers for human excreta did not make an appearance until the nineteenth century. Later sanitarians were to improve on these early efforts, but to Rome belongs the beginning of sanitation.

Man has always been prone to consider that thing unimportant of which he has no certain knowledge. This can be the only explanation then for the period between classical antiquity and the Renaissance having been called the Dark Ages for so long. In architecture and art, it is in many respects still unequalled. In public health the classical ages left us with our first ideas of physical perfection, and a sanitary and hygienic code. The first records of the Renaissance discuss as accepted incidents such things as hospitalization of the sick, various types of surgery, numerous medical schools, quarantine for ships from plague-infested ports, and detailed if erroneous books on anatomy.

To quote Garrison in his "History of Medicine": "The growth of the Christian virtue of compassion towards weakness and suffering, and the more elevated and enlarged conception of the position and mission of women which grew out of it, led to new departures in medicine along untried paths, particularly in nursing the sick and in erecting hospitals everywhere for their care. Only idle bigotry could affirm that Pope and Emperor did not do a great deal for medicine in the advancement of good medical legislation, in the chartering and upbuilding of the medieval universities, in the great hospital movement of the middle ages, and in the encouragement of individual medical talent in many cases."

During this period the hygienic principles first noted by the Hebrews were improved. Many of the rules given in the "Regimen," a handbook of the medical school of Salerno, are good hygienic practice today.

An English translation of one of these advices follows:

"If thou to health and vigour wouldst attain,
Shun weighty cares—all anger deem profane
From heavy suppers and much wine abstain.
Nor trivial count it, after pompous fare,
To rise from table and to take the air.
Shun idle, noon-day slumber, nor delay
The urgent calls of Nature to obey
These rules if thou wilt follow to the end,
Thy life to greater length thou mayst extend."

While hygiene advanced, sanitation was neglected. In a letter Erasmus said concerning the condition of the English household of the sixteenth century, "as to the floors, they are usually made with clay covered with rushes that grew in the fens which are so slightly removed now and then, that the lower part remains sometimes for twenty years together, and in it a collection of spittle, vomit, urine of dogs and men, beer, scraps of fish and other filthiness not to be named".

The first mention of isolation occurred in the ancient Hebrew texts, but its extensive application came about in the Middle Ages. Leprosy, bubonic plague, syphilis and smallpox were epidemic during this period, and strenuous efforts were made to curb them by quarantine and isolation. The success was most marked in leprosy. Nineteen thousand hospitals for lepers were built and the disease gradually died out in Europe. The results were less apparent with the bubonic plague. In the fourteenth century, the black death destroyed one-fourth of the population of Europe. Quarantine was instituted against ships from the plague districts but little attention was given to rats. This would account for the imperfect effect of control of this disease.

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CORRESPONDENCE

AN APPEAL FOR A SECTION OF DERMATOLOGY AND SYPHILOLOGY

Editor, *New England Journal of Medicine*.

The growth of interest in dermatology and syphilology in the past twenty-five years has been striking. This is manifest in the number of societies which now exist, in the steady increase in attendance at these meetings and, perhaps most of all, in the fact that it has been deemed important to establish a national board, known as the American Board of Dermatology and Syphilis, which issues a certificate of fitness to such only as can pass its rigid examinations and searching investigations.

There are four societies with which Massachusetts dermatologists are affiliated. First, there is the New England Society whose membership is largely composed of Massachusetts men. Then there is the Atlantic Dermatological Conference which originated in Boston and now includes societies from Montreal to Washington. Thirdly, there is a large section of the A. M. A., and fourthly, the American Dermatological Association.

As to the attendance at these various societies to which the Massachusetts dermatologists and syphilologists belong, we need only to study the New England Society to obtain a picture of them all. Starting in 1915 with seventeen members, the New England society to-day numbers seventy-five active members with several honorary members in other states.

Hospitals and medical schools, also, reflect the growth of interest. The country over, the clinics for dermatology and syphilis are as large and, in some instances, larger than those for medicine and surgery. (Abroad, three and four hundred bed hospitals devoted solely to dermatology and syphilis are no rarity. In this country, though the number of hospital beds is steadily growing, we are still behind.)

Finally, nine state societies have created Sections for Dermatology and Syphilis which have invariably been great successes.

For these reasons the time has come for the Massachusetts Medical Society to have a section of Dermatology and Syphilis. With such a section in existence as a part of the Society, much will be added to the program of the Annual Meeting which must concern and interest the general practitioner. We, therefore, ask the Council of the Massachusetts Medical Society to establish such a section at its next meeting in order that its educational work may begin at the Annual Meeting of the Society in 1935.

HARVEY P. TOWLE, M.D.
CHARLES J. WHITE, M.D.
FREDERICK S. BURNS, M.D.
WILLIAM P. BOARDMAN, M.D.
RUDOLPH JACOBY, M.D.
E. LAWRENCE OLIVER, M.D.
C. GUY LANE, M.D.
ARTHUR M. GREENWOOD, M.D.
GEORGE A. DIX, M.D.
J. HARPER BLAISDELL, M.D.

CHARGES FOR THE MAINTENANCE OF THE MIDDLESEX SANATORIUM

May 17, 1934.

Editor, *New England Journal of Medicine:*

The letter from Dr. Blaisdell in the March 23 issue interested me, for at the present time I happen to be on the Board of Health of Lincoln in the same county as Winchester, and we must bear our proportionate charge for the maintenance of the Middlesex Sanatorium, the institution which Dr. Blaisdell criticizes.

In the first place, your correspondent states that the town of Winchester was never consulted about building this Sanatorium. That, of course, is an erroneous statement, for the Hospital was built by a mandatory Act of the State Legislature passed in 1928, Chapter 369, and approved by the Governor June 5, 1928. The town of Winchester has its representatives in the Legislature.

The original assessment to the town of Winchester was $60,552.72. Of this, Winchester paid $552.72 in 1932 and elected to have the balance financed by bonds to run for fifteen years, $4,000 maturing each year. Winchester has made two payments on the principal. The interest paid in 1933 was $3,191.39, and for 1934 it was $2,293.74. Obviously as the principal is paid the interest decreases considerably. This is another inaccurate statement by your correspondent, for the town of Winchester is not paying interest at five per cent on $60,000.00.

Again, he does not explain how he obtains the charge for maintenance, $4,553.80. The facts are that $926.72 of this amount was due the Commonwealth from the county over a period of years, and last year by authority of the Legislature (Chapter 331, Acts of 1933) the long-standing bill was apportioned to the various towns, and this was Winchester's share. In no way should this be added to the maintenance charge.

The item of $1,655.50, which is for the care of patients for 135 weeks, appears to be the one correct statement in the letter. I would call attention to a further inaccuracy in that your correspondent did not state that the town of Winchester received $689.99 from the State as a subsidy for the tuberculosis patients.

There may, of course, be an honest difference of opinion as to whether the original cost of the insti-

tution should be counted in the weekly cost of the patient. Personally, I do not think that it should. If it is, your correspondent is again wrong in his estimate of the weekly cost. The total should be $10,886.33, obtained by adding principal paid $4,000, interest paid $2,293.74, maintenance $3,627.08 and care of patients for 135 weeks $1,655.50, and subtracting the subsidy the town received of $689.99. This will give a charge per week of $80.64. I do not feel that the principal and interest should be included in this total. If they were eliminated the cost last year to the town would be $4,592.59, and the cost per week $34.01.

It may be of interest to know what Lincoln paid because of this county hospital. Our original assessment was $5,900.01, which we paid at once. In 1934 we were assessed $430.20. We have not yet had a patient in the hospital.

The care and management of tuberculosis is a community problem, and in my opinion cannot be looked after satisfactorily by the general practitioner. When one realizes that this Sanatorium gives complete care by specialists in tuberculosis, has a sufficient number of trained nurses, dietitians, and a splendid plant, to me it is remarkable that the cost to the county per week is so small.

In addition to the regular care and treatment, special service is given to suitable patients. All forms of collapse therapy are in use, and it is interesting for the profession to know that at the end of 1933, 62½ per cent of the 256 patients then at the Sanatorium had received some form of collapse therapy.

Another important point to be remembered is that the Sanatorium operates an outpatient department where diagnostic service is given without cost to patients of the physicians in the district. Reports of x-ray examinations, tuberculin tests and physical examinations are promptly rendered to the physicians of the county sending their patients there for examination. In 1933 the outpatient department examined 2,044 patients. Further, the Sanatorium sends out members of its staff to conduct clinics at the following places: Ayer Memorial Hospital which serves the eleven towns of the Nashoba health district, Newton Hospital for the City of Newton, and Lawrence Memorial Hospital for the city of Medford.

The waiting list of the Sanatorium is regrettable, but is it not a tribute to the high standard of the service given by the institution and the desire of patients to go there? Not infrequently, when urgent cases have applied for admission and have been referred to other institutions, they have elected to wait until they could get into the Middlesex Sanatorium.

The trustees held a meeting a short time ago at the Sanatorium to tell the county that there was a greater demand for beds than they could supply, and at the present time they are trying to secure permission from the Legislature for an addition of approximately 135 beds to meet this greater demand for treatment.

It is without doubt expensive to care for tuberculosis properly, but it is a disease the prevention of which is important to the entire community, and because of that I believe the work in eradicating tuberculosis should be supported in every possible way and careless criticism should not be made.

ROBERT L. DENORMANDIE.

Lincoln, Mass.

RECENT DEATHS

CHURCHILL—ALICE SYMONDS CHURCHILL, M.D., (reported in the *Boston Herald* as Alice A. Symonds), formerly of Haverhill, died in a hospital at Yarmouth, Nova Scotia, May 14, 1934. She was born in 1860. She graduated from the Massachusetts General Hospital Training School for Nurses and later from the Tufts College Medical School in 1899.

She practiced in Haverhill for several years and served on the staff of the Hale Hospital.

In 1918 she did commendable work in the influenza epidemic.

She left Haverhill about twelve years ago and since then has spent her winters in Florida.

She joined the Massachusetts Medical Society in 1900 and resigned in 1906.

WEBBER—CHARLES SUMNER WEBBER, M.D., of 35 Front Street, Weymouth, Massachusetts, died suddenly May 16, 1934. He was born in 1897. He was a graduate of Boston University School of Medicine and later of the Medical School of Tufts College, and was on the faculty of the Medical School of Boston University. He joined the Massachusetts Medical Society in 1926, and was a Fellow of the American Medical Association. He is survived by his widow, a son, a daughter, his mother and a brother.

COUTURE—MICHAEL HORATIUS COUTURE, M.D., of 58 Western Avenue, Lynn, Massachusetts, died in that city May 16, 1934. He was born in St. Hyacinth, Quebec, in 1872. He graduated in medicine from the University of Montreal Faculty of Medicine in 1893. Previous to practicing in Lynn he practiced in Montreal up to 1899.

Dr. Couture was one of the organizers of the Franco-American Society in Lynn and a member of the St. Jean Baptiste Church. He is survived by a sister, Miss Mary Couture, of Coaticook, Quebec.

NOTICES

ST. VINCENT HOSPITAL, WORCESTER

DRY CLINIC, MONDAY, JUNE 4 (THE FIRST DAY OF THE MASSACHUSETTS MEDICAL SOCIETY MEETING)

10:30 A.M. to 12:30 P.M.

1. Indications for Devine operation for stomach lesions. Dr. James C. McCann.
2. Non-industrial lead poisoning. Dr. J. J. Dumphy.
3. Cancer of larynx. Dr. William E. Murphy.

4. Fracture of neck of femur—nail operation. Dr. John W. O'Meara.
5. Trichiniasis simulating surgical conditions. Dr. John M. Fallon.
6. X-ray diagnosis—Kidney. Dr. A. E. O'Connell.
7. Pathological demonstration. Dr. William Moran.

WORCESTER CITY HOSPITAL

The program of clinics to be given at the Worcester City Hospital, Monday, June 4, 1934 (the first day of the annual meeting of the Massachusetts Medical Society) has been amended as follows:

Participating in the Surgical Section, in addition to Dr. F. H. Lahey, who will present peptic ulcers, the following names have been included:

Dr. G. E. Haggart, presenting fractures; Dr. H. M. Clute, presenting gall stones; Dr. R. B. Cattell, presenting cancer of the colon and rectum; and Dr. L. M. Hurxthal, presenting thyroidectomy and myxedema.

A complete program will be distributed at the meeting.

REPORTS AND NOTICES OF MEETINGS

THE NORFOLK DISTRICT MEDICAL SOCIETY

The Annual Meeting of the Norfolk District Medical Society was held in the Hotel Kenmore, Boston, on the evening of May 8, 1934. The business meeting was called to order by Dr. Begg, the President, at 6:15 P.M. Minutes of the previous meeting were read and accepted. Report of the Treasurer was read and accepted. Reports of various committees were read and accepted. The Nominating Committee's List for 1934-1935 was then read and the Secretary was instructed to cast one ballot for the list as read. The ballot was so cast and the following officers were declared elected:

President: Cadis Phipps, Brookline.

Vice-President: Leighton F. Johnson, Norwood.

Secretary: Frank S. Cruickshank, Brookline.

Treasurer: George W. Kaan, Sharon.

Commissioner of Trials: H. F. R. Watts, Dorchester.

Nominating Councilor: T. J. Murphy, Roxbury; W. A. Griffin (Alt.), Sharon.

Censors: H. K. Boutwell, Brookline; E. P. Ruggles, Dorchester; George W. Winchester, Milton; Herbert L. Johnson, West Roxbury; Maurice Gerstein, Roxbury.

Councilors: H. L. Babcock, Dedham; Karl R. Bailey, Jamaica Plain; Henry Baker, Dorchester; F. G. Balch, Jamaica Plain; Hollis Batchelder, Dedham; A. S. Begg, West Roxbury; David D. Berlin, Brookline; David N. Blakely, Brookline; H. K. Boutwell, Brookline; Walter L. Burrage, Brookline; F. S. Cruickshank, Brookline; S. F. Curran, Dorchester; David G. Eldridge, Dorchester; A. L. Fenton, Norwood; I. A. Finkelstein, Dorchester; John E. Fish, Canton; C. S. Francis, Brookline; Alice M. Gray, Roxbury; W. A. Griffin, Sharon; J. B. Hall, Roxbury; L. F. Johnson, Norwood; F. E. Jones, Brookline; George W. Kaan, Sharon; W. B. Keeler, Roxbury; C. J. Kickham, Brookline; M. M. Knudson, West Roxbury; W. A. Lane, Milton; J. S. H. Leard, West Roxbury; Charles Malone, Jamaica Plain; F. W. Marlow, Jr., Brookline; J. S. May, Roxbury; F. P. McCarthy, Milton; L. T. McCready, Jamaica Plain; S. F. McKeen, Brookline; Hyman Morrison, Roxbury; T. J. Murphy, Roxbury; Samuel Nadel, Dorchester; Benjamin Parvey, Dorchester; Cadis Phipps, Brookline; Victor Safford, Jamaica Plain; David D. Scannell, Jamaica Plain; Alonzo J. Shadman, Jamaica Plain; J. L. Sullivan, Roxbury; H. F. R. Watts, Dorchester.

At the close of the business meeting it was announced that a letter of commendation was received by the officers in connection with the work of the Legislative Committee of this Society expressing appreciation of the work of this committee with particular reference to its activities in relation to Senate Bill No. 162.

A standing vote of thanks was accorded the officers of the Society and the Committees for their work during the past year.

After the transaction of certain incidental business this section of the meeting was adjourned.

An excellent dinner was enjoyed in the Crystal Room of the Hotel and following this the members and guests enjoyed an extremely interesting illustrated lecture entitled "The Romance of News Gathering," by Mr. Alton Hall Blackington, photographer for the *Boston Herald*.

FRANK S. CRUICKSHANK, M.D., *Secretary*.
1695 Beacon Street, Brookline.

WORCESTER DISTRICT MEDICAL SOCIETY

OFFICERS ELECTED FOR 1934-1935

President: Dr. Ernest B. Emerson, Rutland.

Vice-President: Dr. William F. Lynch, Worcester.

Orator: Dr. Roy J. Ward, Worcester.

Treasurer: Dr. Edward P. Disbrow, Worcester.

Secretary: Dr. Erwin C. Miller, Worcester.

Councilors on Nominations: Dr. David Harrower, Worcester; Dr. Royal P. Watkins, Worcester—Alternate.

Committee on Funds: Dr. Michael F. Fallon, Worcester; Dr. Royal P. Watkins, Worcester; Dr. Leslie R. Bragg, Webster.

Commissioner of Trials: Dr. Walter P. Bowers, Clinton.

Councilors: Dr. James C. Austin, Spencer, term began 1930; *Dr. Walter P. Bowers, Clinton, term began 1902; Dr. Leslie R. Bragg, Webster, term began 1922; Dr. Frank H. Clapp, North Grafton, term began 1930; Dr. Philip H. Cook, Worcester, term began 1929; Dr. William J. Delahanty, Worcester, term began 1913; Dr. George A. Dix, Worcester, term began 1921; Dr. Ernest B. Emerson (President), Rutland, term began 1934; Dr. George E. Emery, Worcester, term began 1920; Dr. Michael F. Fallon, Worcester, term began 1916; Dr. Homer

Gage, Worcester, term began 1906; Dr. James J. Goodwin, Clinton, term began 1921; Dr. David Harrower, Worcester, term began 1905; Dr. Ernest L. Hunt, Worcester, term began 1918; Dr. Edwin R. Leib, Worcester, term began 1932; Dr. Arthur W. Marsh, Worcester, term began 1922; Dr. Erwin C. Miller (Secretary), Worcester, term began 1929; Dr. Joseph W. O'Connor, Worcester, term began 1931; Dr. Walter C. Seelye, Worcester, term began 1930; Dr. Edward H. Trowbridge, Worcester, term began 1924; Dr. Frank H. Washburn, Holden, term began 1916; Dr. Royal P. Watkins, Worcester, term began 1927; *Dr. Samuel B. Woodward, Worcester, term began 1902.

Censors: Dr. George A. Dix, Supervising Censor, Worcester; Dr. Gardner N. Cobb, Worcester; Dr. John W. O'Meara, Worcester; Dr. John E. Talbot, Worcester; Dr. Donald S. Adams, Worcester.

Nominating Committee: Dr. John M. Fallon, Worcester; Dr. Alvin R. Moses, Charlton; Dr. Raymond H. Goodale, Worcester; Dr. Gordon Berry, Worcester; Dr. Joel M. Melick, Worcester.

Library Committee: Dr. John M. Fallon, Worcester; Dr. Ernest L. Hunt, Worcester; Dr. Arthur W. Marsh, Worcester.

Librarian: Dr. Albert C. Getchell, Worcester.

Auditing Committee: Dr. Donald K. McClusky, Worcester; Dr. Thomas Hunter, Shrewsbury; Dr. James T. Brosnan, Worcester.

*Councilor for life by virtue of being a past president of the State Medical Society.

ESSEX NORTH DISTRICT MEDICAL SOCIETY

The ninety-third annual meeting of the Essex North District Medical Society was held at the Andover Country Club on Wednesday, May 9, 1934, at 12:30 P.M. Dr. Parr, vice-president, presided in the absence of Dr. Coffin. A steak dinner was served at 12:30 followed by the business meeting.

The records of the previous meeting were read and approved.

On motion of Dr. Burnham it was voted that the Society pay seventy-five cents for each member (half the cost of the dinner).

The treasurer's report was read and accepted by the Society.

The report on the Committee on Permanent Funds was read by Dr. G. S. Allen, showing a total on deposit at present $1553.32, with a balance due the Permanent Fund from the frozen assets at the First National Bank in Haverhill, of $153.54.

Resolutions on the death of Dr. Merrill, of Lawrence, were read by Dr. Sargent, and it was moved that they be spread upon the records and a copy sent to the family.

The report on the death of Dr. McGauran was read by Dr. McAllister and it was voted that this be inscribed on the records and a copy sent to the family.

The report of the Public Relations Committee was submitted by Dr. Bagnall and was accepted as a report of progress.

Dr. Sweetsir, chairman of the nominating committee, submitted the nomination of officers for the ensuing year and it was unanimously voted that the secretary cast one ballot for the list as submitted, which list is appended below.

The president then introduced Dr. L. M. Hurxthal who showed two very instructive reels of moving pictures manifesting very clearly in a diagrammatic way the mechanism of heart action through its conducting paths and parallel with these diagrams the part of the electrocardiogram corresponding with each part of the cycle.

Dr. L. E. Phaneuf, of Boston, was then introduced and, with the assistance of lantern slides, demonstrated and discussed some of the more common lesions with appropriate office treatment, in the gynecological field. Dr. John Sproull of Haverhill was then introduced and discussed in a very practical way the diagnosis and management of angina pectoris.

The meeting was adjourned at 4:30.

President: J. E. Parr, Methuen.
Vice-President: C. F. Warren, Amesbury.
Secretary: E. S. Bagnall, Groveland.
Treasurer: E. S. Bagnall, Groveland.
Auditor: A. M. Hubbell, Haverhill.
Censors: E. P. Laskey, Haverhill; R. L. Toppan, Newburyport; J. F. Walch, Lawrence; A. E. Chesley, Lawrence; P. J. Mullen, Amesbury.
Councilors: J. F. Burnham, Lawrence; T. R. Healy, Newburyport; F. W. Snow, Newburyport; H. F. Dearborn, Lawrence; Arthur P. George, Haverhill; E. P. Laskey, Haverhill; L. T. Stokes, Haverhill; R. V. Baketel, Methuen; J. J. McArdle, Lawrence; W. D. Walker, Andover.
Nominating Councilor: J. F. Burnham, Lawrence.
Alternate Nominating Councilor: T. R. Healy, Newburyport.
Commissioner of Trials: R. C. Hurd, Newburyport.
Committee on Funds: G. S. Allen, Lawrence; G. B. Sargent, Lawrence; H. Kapp, Haverhill.
Correspondent to *New England Journal of Medicine:* E. S. Bagnall, Groveland.
Delegate to Committee on Public Relations of Massachusetts Medical Society: E. S. Bagnall, Groveland.

E. S. BAGNALL, M.D., *Secretary.*

PHI DELTA EPSILON FRATERNITY

The Phi Delta Epsilon Fraternity of the Boston University School of Medicine held its meeting in the Evans Memorial Auditorium on Monday, April 23, 1934. Dr. Alexander S. Begg presided.

The first speaker was Dr. Lewis M. Hurxthal of the Lahey Clinic, who presented a very interesting discussion of "Myxedema, Hypometabolism, and Blood Cholesterol." Several instructive cases were presented and illustrated by means of lantern slides.

It was pointed out that the basal metabolic rate does not parallel the degree of thyroid deficiency, and cases are frequently encountered in which the deficiency is not clinically apparent and the basal metabolic rate is equivocal. It is especially in these cases that a determination of the blood cholesterol is helpful in so far as it is an indicator of thyroid deficiency. It is also of great value in determining whether a patient needs substitution therapy after subtotal thyroidectomy.

Dr. Hurxthal illustrated five cases of hypopituitarism from chromophobe adenomata. In these cases the basal metabolism varied from minus 18 to minus 37 but there was no elevation of the blood cholesterol. For this reason it is unlikely that the lowered metabolic rates in these cases were due to a secondary depression of the thyroid. Normal cholesterol values were found in spite of lowered basal metabolism in five cases of obesity, two cases of Addison's disease, and several cases of hypometabolism from other causes. In conclusion Dr. Hurxthal discussed the advantages of the blood cholesterol as a clinical aid in the diagnosis of thyroid deficiency states.

Dr. Frank H. Lahey next discussed "Hyperthyroidism, Its Diagnosis and Management." By means of lantern slides he showed patients, illustrating the different forms of the disease. The first case was that of a young girl with extraordinarily prominent signs of hyperthyroidism. The picture was one of typical "frozen fright"; there was such marked exophthalmos that considerable difficulty was experienced in attempting to keep the lids from slipping back behind the eyeball; and the other classical signs of Graves' disease were present. There was no apparent enlargement of the thyroid gland. The speaker emphasized the fact that the disease is exactly the same in young and adults. Children, however, have a tremendous capacity for reacting to intoxications of any sort. Hence it may become difficult to tell whether a given clinical picture, such as fever, elevated basal metabolic rate, etc., is due to the intensity of the disease process or to the exaggerated way in which children react to the intoxication. For this reason two exceptions are made in the treatment of hyperthyroidism in children:

1. One-stage subtotal thyroidectomy is to be avoided because of the violent reaction that children may have postoperatively.

2. Children, unlike adults, need the products of thyroid activity for growth and development so that less thyroid is removed at operation than in adults.

Dr. Lahey next described an interesting group of cases of what he has called "Apathetic Hyperthyroidism." The underlying condition is essentially identical with that of typical Graves' disease, but the difference in the clinical pictures is due to the fact that the former occurs in older individuals, who not only react differently to the intoxication but are very apt to have a long-standing burned-out process. In these cases one finds no anxiety or tension. The picture is rather one of apathy. Instead of warm, moist, flushed skin of the activated case, one finds a cool, dry, pigmented, wrinkled skin. The cause of the pigmentation is not understood, but it disappears after operation. The basal metabolic rate in these patients is only moderately elevated. There is a tachycardia, but the typical pounding heart found in young persons is absent. The diagnosis of apathetic hyperthyroidism is made by the presence of an unexplained slightly elevated basal metabolism, a tachycardia, a history of loss of weight over a long period of time and no marked myasthenia.

The speaker then described Thyroid Crisis and its management. The clinical picture and the results of treatment were very well illustrated with lantern slides. Patients have crises when a maladjustment occurs between the food intake and the fuel required to satisfy the increased basal metabolism. The imbalance is aggravated by vomiting and diarrhea which are prominent symptoms. Once the state of thyroid crisis has set in, treatment is difficult, but if the condition is recognized before it is fully established it responds to treatment quite satisfactorily. For early diagnosis, the following points should be borne in mind:

1. A rise in pulse rate day after day for no obvious reason. 2. Unexplained vomiting and diarrhea. 3. Signs of irrationality. 4. The development of an infection of any kind.

Any of the above signs should make one suspect impending crisis in hyperthyroidism and is an indication for the institution of immediate treatment. Dr. Lahey stressed the use of constant intravenous glucose in saline in the management of crisis. It is best to cut down on the vein and tie in an indwelling intravenous needle. The five per cent glucose solution is run in at a rate of 40 to 60 drops per minute night and day for as long as necessary. The speaker cited one case in which this was done for eleven days.

The consensus has been in the past not to operate upon patients for a considerable time after crisis. Dr. Lahey pointed out that this idea has been erroneous. He advised vigorous pre-operative treatment with a high carbohydrate diet after the crisis has been passed. This is followed in two or three weeks by removal of half the thyroid which prevents the patient from returning into crisis. After about six weeks the operation for subtotal thyroidectomy is completed.

The treatment of the eyes in hyperthyroidism is very important. One case was illustrated in which exophthalmos developed after a condition of myxedema had set in with a basal metabolic rate of minus 25. Exophthalmos is due to a myxomatous infiltration of the extrinsic eye muscles so that the orbit is unable to accommodate all the ocular tissues. The logical treatment is therefore to decompress the orbit and this is accomplished by removing the roof of the orbit on each side, a neurosurgical procedure. Dr. Horrax has done this operation in a few cases and thus saved eyes which would certainly have been

lost. The slightest injury to the eyes in cases of exophthalmos exposes them to infection and subsequent complete destruction. In operating upon a patient with exophthalmos, therefore, extreme care should be exercised in the protection of the eyes.

The subject of iodine in hyperthyroidism was next discussed. The administration of iodine leads to remarkable changes in the hyperplastic thyroid. The colloid is increased, the iodine content of the dried gland is increased, and the epithelium is changed from the typical columnar type of the hyperplastic gland to a low cuboidal. Marine believes that the iodine causes an accumulation of colloid within the follicles and this through the agency of increased pressure causes a regression of the hyperplasia. Patients become refractory to the influence of iodine after this drug has been administered for about two months. For this reason physicians should not administer iodine to patients with hyperthyroidism if operation is planned for the near future. The administration of iodine should be left in charge of the surgeon.

Dr. Lahey discussed the group of patients which he has termed thyrocardiac. These are patients with hyperthyroidism and either auricular fibrillation or cardiac decompensation. The condition results from the overloading of a previously damaged heart by overactivity of the thyroid. The mortality from operations on thyrocardiacs has been about 4.25 per cent. About 97 per cent of patients have been permanently relieved of decompensation. Follow-up has shown, however, that the blood pressure continues to have a rising tendency in spite of operation.

The speaker next described the condition of intrathoracic goiter and illustrated the clinical picture and x-ray findings by lantern slides. About eight per cent of over 12,000 goiters at the Lahey Clinic have been intrathoracic. Symptoms of dyspnea and choking are prominent in this condition and most apt to come on at night when the bronchi are not kept so well cleared as during the daytime. The mortality from operation in this type of goiter has been only two per cent.

Dr. Lahey ended his talk with a consideration of tumors of the thyroid in which he brought out interesting points both in diagnosis and treatment. About 96 per cent of thyroid carcinomata arise from fetal adenomata. Metastasis of the histologically benign adenoma was explained by the fact that these tumors grow into veins and so are transported elsewhere in the body. The location and typical appearance of lateral aberrant thyroids were discussed and their relation to malignancy was emphasized.

An excellent discussion of the subjects presented was given by Dr. Allan Winter Rowe. He pointed out the numerous factors which influence the basal metabolic rate so as to make the determination unreliable. The blood cholesterol level may well be a better index of thyroid deficiency. Even this, however, may be hardly more than a rough index. Dr. Rowe said that the true significance of blood constituents will be realized only when the laboratory sciences have progressed to such a degree as to enable us to interpret the various elements in terms of each other. Drs. Hurxthal and Lahey answered several questions which had been asked during the course of the discussion.

NEW ENGLAND MEDICAL SOCIETY

The semi-annual meeting of the New England Medical Society will be held in the Evans Auditorium of the Massachusetts Memorial Hospitals, 80 East Concord St., Boston, on Thursday, May 31, at 8:15 P.M. The speaker of the evening will be Dr. Edward W. Archibald of Montreal, Professor of Surgery, McGill University Faculty of Medicine. His subject will be "The Aetiology and Treatment of Recurring Subacute Pancreatitis" (with lantern slides). Discussion by Drs. Charles T. Howard, Daniel F. Jones, Richard H. Miller, William R. Morrison and Lester R. Whitaker. All physicians interested in this subject are invited to attend this meeting.

RUDOLPH JACOBY, M.D., *Associate Secretary.*

AMERICAN ASSOCIATION FOR THORACIC SURGERY

The seventeenth annual meeting of the American Association for Thoracic Surgery will be held in Boston on May 31, June 1 and 2. A program of papers on thoracic surgery and allied subjects will be given on Thursday and Friday in Building C Amphitheatre at the Harvard Medical School. On Saturday morning programs will be provided at the Massachusetts General Hospital, the Peter Bent Brigham Hospital, and the New England Deaconess Hospital on thoracic disease.

Owing to a limited seating capacity a large portion of the Amphitheatres must be reserved for members of the Society and their out-of-town guests. However, it is hoped that there will be adequate space to enable local members of the profession particularly interested in this field to attend the sessions.

ALUMNI LUNCHEON

Massachusetts Alumni of University of Maryland Medical School, Baltimore Medical College, College of Physicians and Surgeons, Baltimore.

Date—Tuesday, June 5th.

Time—12:30 P.M.

Place—Hotel Bancroft, Worcester.

Reservation should be made through Dr. W. B. Davidson (1917), 36 Pleasant St., Worcester.

AMERICAN PROCTOLOGIC SOCIETY

CLEVELAND, MONDAY AND TUESDAY, JUNE 11-12, 1934

Headquarters: Hotel Cleveland.

Arrangements: T. E. Jones, Cleveland; C. C. Meckling, Pittsburgh.

Regular and orthodox practitioners, members of the American Medical Association, and not affili-

ated with medical groups admitting those not members of the A. M. A., are hereby cordially invited to attend the 35th Annual Meeting in Cleveland, Monday and Tuesday, June 11 and 12—the week of the A. M. A. meeting.

For additional information, address the Secretary, Frank G. Runyeon, M.D., F.A.C.S., 1361 Perkiomen Avenue, Reading, Pa.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

May 26, 27, 28, and 29—The American Association on Mental Deficiency. Details may be obtained from the Secretary, Dr. Groves B. Smith, Godfrey, Illinois.

May 28 - June 1—American Psychiatric Association will be held at the Hotel Waldorf-Astoria, New York City.

May 31—New England Medical Society. See page 1141.

May 31 - June 2—American Association for Thoracic Surgery. See page 1141.

June 4—Worcester City Hospital Clinics. See page 1137.

June 4—St. Vincent Hospital (Worcester) Clinics. See page 1137.

June 5—Alumni Luncheon, Massachusetts Alumni of the University of Maryland Medical School. See page 1141.

June 7—Faulkner Hospital Clinical Meeting will be held at 5 P.M.

June 7, 8, 9—Annual Meeting of the American Association for the Study of Goiter will be held in Cleveland, Ohio. For details of the program apply to Dr. J. R. Yung, Terre Haute, Ind.

June 11—American Medical Golfing Association will meet at the Mayfield Country Club in Cleveland. For details see page 1090, issue of May 17.

June 11-12—The American Proctologic Society. See page 1141.

June 12—American Heart Association will meet at 9:30 A.M. at the Cleveland Hotel, Cleveland, Ohio.

July 24-31—The IVth International Congress of Radiology will be held in Zurich under the presidency of Professor H. R. Schnis. General Secretary Dr. H. E. Walther, Gloriastrasse 14, Zurich.

August 18 - September 30—Medical Study Trip to Hungary. See page 975, issue of May 10.

September 3-6—American Public Health Association, at Pasadena, California. Dr. J. D. Dunshee, Chairman, Local Committee on Arrangements.

September 4, 5, 6—International Union Against Tuberculosis. For information address the National Tuberculosis Association, 450 Seventh Avenue, New York City.

BOOKS RECEIVED FOR REVIEW

Bright's Disease. A clinical handbook for practitioners and senior students. By J. Norman Cruickshank. 208 pp. Baltimore: William Wood and Company. $3.75.

Synopsis of Obstetrics and Gynecology. By Aleck W. Bourne. Fifth Edition. 439 pp. Baltimore: William Wood and Company. $5.25.

The Queen Charlotte's Text-Book of Obstetrics. By Aleck W. Bourne and others. Third Edition. 679 pp. Baltimore: William Wood and Company. $6.00.

Surgical Clinics of North America. February, 1934. Volume 14, Number 1. Philadelphia Number. 226 pp. Philadelphia: W. B. Saunders Company. Paper, $12.00, Cloth, $16.00.

An Outline of Immunity. By W. W. C. Topley. 415 pp. Baltimore: William Wood and Company. $6.00.

Aids to Neurology. By E. A. Blake Pritchard. Students Aids Series. 376 pp. Baltimore: William Wood and Company. $2.00.

Our Mysterious Life Glands and How They Affect Us, Including the Vitamins. By William J. Robinson. 291 pp. New York: Eugenics Publishing Company. $2.00.

The Elements of Experimental Embryology. By Julian S. Huxley and G. R. de Beer. 514 pp. Cambridge: The University Press. $7.00.

Rhythm of Life. A guide to sexual harmony for women. By Sofie Lazarsfeld. 329 pp. New York: Greenberg. $5.00.

External Disease of the Eye. By Donald T. Atkinson. 704 pp. Philadelphia: Lea & Febiger. $7.50.

Transactions of the American Association of Genito-Urinary Surgeons. Forty-Fifth Annual Meeting held at Washington, D. C., May 8, 9, 10, 1933. Volume XXVI. 393 pp. Saint Paul and Minneapolis: The Bruce Publishing Company.

The Medical Profession and the Public. Containing papers read at a joint meeting of The College of Physicians of Philadelphia and The American Academy of Political and Social Science, in Philadelphia, February 7, 1934. 112 pp. Pennsylvania: Lancaster Press, Inc.

Studies from The Rockefeller Institute for Medical Research. Reprints. Volume 88. 621 pp. New York: The Rockefeller Institute for Medical Research, 1934.

BOOK REVIEWS

Teaching Methods in Medicine. By William D. Reid. 111 pp. The Graphic Press. $1.00.

The purpose of this little book is to stimulate teachers in medical schools to find out whether there are methods of teaching developed in non-medical fields that might prove useful in medicine. The subtitle indicates that it proposes to discuss the application of philosophy of contemporary education to medical schools. The author foregoes inquiry into what the philosophy (if any) may be and dwells rather on certain facts about some types of contemporary education. Some "philosophies" of contemporary education have been developed as the result of attempts to educate sub-normal persons (the Montessori system, which perhaps is already mediaeval) or from efforts to educate groups of persons whose formal education closes with the junior high school because they have no intellectual interest in advance. This may be useful in analysis as the cinema film, run slowly or halted, shows elements in physical motion that escape the unaided eye. Yet to what extent these "philosophies" apply to university education is not made clear.

The background of the book is one of the most devastating criticisms possible of the present situation in medical education as it takes for granted that students of university grade need to have interest in their studies stimulated. "It is the teacher's job to see to it that the student experiences the 'will to learn,' or feels a need for the learning" (p. 25). By what right are these persons studying medicine if they are not interested in their studies? It is to be